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PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES; APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

Draft decision proposed by the Bureau

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PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

Draft decision proposed by the Bureau

The Preparatory Committee,

1. Welcomes the report of the Secretary-General of the Conference on the Protection of the Quality and Supply of Freshwater Resources (A/CONF.151/PC/73) and the Options for Agenda 21 on freshwater resources (A/CONF.151/PC/42/ADD.7). Requests the Secretary-General of the Conference to consolidate and integrate related programme areas and rationalize their presentation for consideration at its fourth substantive session. The Committee requests the Secretary-General of the Conference to take into consideration inter alia all relevant paragraphs of General Assembly resolution 44/228, the relevant resolutions taken at the first and second substantive sessions and the decisions taken at this substantive session, in the preparation of a draft Agenda 21 section on Freshwater Resources.

2. Emphasizes the need to include the requests made hereunder into the Options for Agenda 21 on freshwater resources as amended at the third session of the Preparatory Committee and annexed to this decision.

3. Requests the Secretary-General of the Conference to further develop the six programme areas for freshwater resources, as given in the Annex, in relation to Means of Implementation, incorporating the suggestions and comments from delegations.

4. Having revised the Options for Agenda 21 on freshwater resources at its third session, agrees upon the inclusion of the following particularly important revisions and additions:

- "Integrated water resources management" as the principal programme area; other programme areas are: "Water resources assessment", "Protection of water quality and aquatic ecosystems", "Drinking water supply and sanitation", "Water and sustainable urban development" and "Water for sustainable food production"

- recognition of the need to identify implementation mechanisms as a crucial element of Agenda 21
- increased emphasis on the developmental aspects of integrated freshwater resc ces management
- attention to the water problems of specific concern to developing countries, including ecosystems and human health protection
- capacity building, awareness building, education, financial arrangements and research and development programmes as crucial prerequisites for water management
- importance of an integrated approach to pollution control, including preventative measures and risk management
- interlinkages between fresh and marine waters and the protection of wetlands and biodiversity
- groundwater protection as an integral component of the freshwater issue
- importance of identifying actions required at the local, national, regional and global levels for water management
- importance of large-scale hydrospheric phenomena
- inland fisheries and aquaculture as important elements to be included
- importance of the need for participation of women and indigenous peoples in water management

5. Requests the Secretary-General to prepare an Addendum to the Options for Agenda 21 on freshwater resources which elaborates, inter alia, on the following issues:

- implementation mechanisms
- global and regional cost estimates
- research and development
- programme areas requiring further elaboration with regard to objectives and activities

6. Request the Secretary-General to submit the revised Options for Agenda 21 (as given in the Annex) together with the above mentioned Addendum, to the International Conference on Water and the Environment (ICWE) in Dublin, inviting the ICWE to

- review this material with particular attention to implementation aspects
- recommend appropriate mechanisms and economic instruments for implementing and coordinating the programmes which it will present to the UNCED
- identify options for improved coordination and cooperation on water management at the local, national, regional and global level
- submit its recommendations to the Secretary-General of UNCED before the fourth session of the Preparatory Committee

7. Request the Interagency Steering Committee of the ICWE to harmonize the working group themes of the ICWE with the programme areas of Agenda 21, as contained in the Annex.

8. Urges the member organizations of the ACC Intersecretariat Group for Water Resources, and Governments, in light of the acute financial situation, to contribute generously to the preparation and organization of the ICWE.

9. Requests the Secretary-General to submit the recommendations of the ICWE to its fourth session, along with the options for Agenda 21 on freshwater resources as annexed and the above mentioned Addendum.

PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

Options for Agenda 21

I. INTRODUCTION

1. Effectively integrated management of water resources is important to all socio-economic sectors relying on water. Rational allocation prevents conflict and enhances the social development of local communities as well as economic planning and productivity. Efficient demand management allows water-using sectors to make long-term savings on water costs and stimulates resource-conscious production technologies. Health conditions and environmental quality should also improve either resulting from integrated development planning or as a beneficial consequence of improved environmental or social conditions.

Linkages to other Environmental and Developmental Issues

2. Water is a finite resource, essential for the sustenance of life on earth. Virtually all the environmental issues listed in the United National General Assembly resolution 44/228 are directly or indirectly linked to freshwater issues. With increase in economic activities and the consequent potential for stress on ecosystems and natural resource stocks, the study of linkages between freshwater issues and other sectoral and cross-sectoral issues is becoming increasingly important. Socio-economic pursuit—including urbanization, industrial production and agricultural activities—has reached a stage where freshwater issues have often become the limiting factor for sustainable development. Freshwaters—rivers, reservoirs, lakes and ground waters—are in contact with other ecosystems and are used in a variety of human activities, many of which would not be possible without a freshwater supply of adequate quality and quantity.

3. Poor land-use management, including deforestation, non-sustainable agriculture, mining and urbanization, could lead to a considerable increase in erosion problems and related soil loss in the river basins. The sedimentation in large reservoirs may have serious adverse effects downstream by reducing the quantity of natural nutrients available to agricultural land or to coastal waters. The loss of nutrients can lead to increased fertilizer use and decreases in coastal fishery yields. Acidification of surface and some ground waters due to atmospheric deposition of air pollutants can lead to depletion of freshwater living resources, contributing to the loss of biodiversity. Construction of dams for hydropower and irrigation, water channelization, over-

abstraction from aquifers, use of water bodies as open sewers for discharge of both domestic and industrial wastes can lead to salinization of rivers, lakes, and soils, salt intrusions in coastal aquifers, and serious water pollution problems. Should global warming occur as a result of climate change it may affect the world's freshwater resources through changes in the hydrologic cycle, resulting in changes in precipitation, with possible decreases in many areas of the Northern Hemisphere, accompanying decreases in soil moisture and annual river runoff. Even in the absence of global warming, natural variation in precipitation may be expected as in the past, resulting in periodic drought which can impact water availability, with consequent negative implications for economy and development.

4. Water-related diseases are still a major health problem, especially in the developing countries. Diseases caused by microbiological pollution of water supplies or transmitted by water-associated vectors, and those related to inadequate sanitation and absence of clean water, are widespread. With water use per capita expected to increase significantly in developing countries with high economic or population growth rates, the volume of waste requiring treatment is expected to present a growing problem. To ignore the interactions and linkages between freshwater issues and other sectoral issues could result in severe social, economic or human health consequences.

II. GENERAL OBJECTIVES OF AGENDA 21

5. Water is a necessity of all life. The overall objective is to maintain the hydrological, biological and chemical functions of ecosystems and to adapt human activities to the limits of nature's carrying capacity.

6. Freshwater resources are an essential component of the earth's hydrosphere and an indispensable part of all terrestrial ecosystems. The freshwater environment is characterized by its hydrological regime including floods and droughts which have become more extreme and dramatic in their consequences in recent years. Global climate changes could also have their impact on freshwater resources and their availability and, through sea level rise, threaten coastal aquifers and small island ecosystems.

7. Freshwaters are a finite resource, not only indispensable for the sustenance of life on earth but also of vital importance to all socio-economic sectors. Development is not possible without

considerable exploitation of water sources in relation to other land use activities and the control of deforestation and desertification. Priority must be given to the sustenance of land/water ecosystems, with particular attention to wetlands and biodiversity, and the satisfaction of basic human needs for drinking water, health protection and food security. For any water utilization beyond this, freshwater resources have to be considered as an economic good with an opportunity cost in alternative uses.

8. The Mar del Plata Action Plan, which emerged from the United Nations Water Conference in 1977, remains generally valid as the common basis for national and international action programmes in the freshwater sector. The review of progress achieved in its implementation and resulting strategies for the 1990s are reflected in Economic and Social Council resolution 1991/... . Agenda 21 in this sector, as presented hereunder, is based on these strategies, on the results of the Global Consultation on Safe Water and Sanitation for the 1990s, held at New Delhi in September 1990 (General Assembly resolution 45/181) and on the results of the International Conference on Water and the Environment in Dublin, January 1992.

9. The wide-spread scarcity of freshwater resources and their aggravating pollution in many world regions demands truly integrated water resources planing and management. The multi-sectoral nature of water resources development in the context on socio-economic development must be recognized as well as the multi-interest utilization of water resources for agriculture, industry, urban development, hydropower, inland fisheries and other activities. Rational water utilization schemes for the development of surface and underground water supply sources have to be supported by concurrent water conservation and wastage minimization measures.

10. Integrated water resources management necessitates appropriate mechanisms at the global, regional, national and local levels for implementing, coordinating and funding the related strategies and action programmes. Management of water resources should, as far as possible, take place in a river basin context (catchment level). The options proposed by the International Conference on Water and the Environment—Development Issues for the 21st Century, [held] in Dublin, January 1991, provide the basis for identifying suitable implementation mechanisms.

11. Capacity building is a prerequisite to integrated water resources management. Technical solutions will not achieve programme objectives on their own without suitable attention given to the human factor. The Symposium on a Strategy for Water Resources Capacity Building, held in

Delft, June 1991, recognized the importance of capacity building for integrated and sustainable development of water resources at all levels. Capacity building consists of three basic elements:

- creating an enabling environment with appropriate policy and legal frameworks;
- institutional strengthening and development, including local community participation;
- human resources development, including the strengthening of managerial systems and water users interests;
- awareness building and education at all levels of society.

12. Adequate financial resources are indispensable for the effective utilization and protection of freshwater resources. Pursuant with the recognition of water as an economic good, but with priority to the satisfaction of basic needs, internal revenues have to be generated through cost recovery schemes, water tariffs, taxes, etc. reflecting marginal and opportunity costs. [In addition, external support is often required for water resources development from multilateral or bilateral sources (External Support Agencies) and from the private sector.]

13. Innovative technologies, including the improvement of indigenous techniques, are much needed to fully utilize limited water resources and to safeguard them against pollution. Implementation of Agenda 21 in the water sectors must therefore be supported by broad-based research and development programmes allowing for new technological solutions to be developed and field-tested. Technology [transfer] and [cooperation and diffusion] on all aspects of integrated water resources management is to be built into each programme area.

III. PROGRAMME AREAS OF AGENDA 21

14. In accordance with the general objectives, the following six components were developed for the freshwater sector:

(a) Integrated Water Resources Management
(b) Water Resources Assessment
(c) Protection of Water Quality and Aquatic Ecosystems
(d) Drinking Water Supply and Sanitation
(e) Water and Sustainable Urban Development

(f) Water for Sustainable Food Production

15. Each component is presented in this document in a format which covers the basis for action, objectives, and programme activities. [Implementation mechanisms will be identified by the Dublin Conference on Water and the Environment.]

A. INTEGRATED WATER RESOURCES MANAGEMENT

Basis for action

16. The extent to which water resources development contributes to economic productivity and social well being is not usually appreciated although all social and economic activities rely heavily on the supply and quality of fresh water. As populations and economic activities grow many countries are rapidly reaching conditions of water scarcity or face limits to economic development. Water demands are increasing rapidly, with 70-80% for irrigation, less than 20% for industry and a mere 6% for domestic consumption. The holistic management of water as a finite and vulnerable resource, and the integration of sectoral water plans and programmes within the framework of national economic and social policy is of paramount importance for action in the 1990s and beyond. The fragmentation of responsibilities for water resources development among sectoral agencies is proving, however, to be an even greater impediment to promoting integrated water management than had been anticipated. Effective coordination mechanisms are required not only at the national level but also at the inter-country and international levels.

Objectives

17. Integrated water resources management is based on water as an integral part of the ecosystem, a natural resource and an economic good. In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems. Beyond these requirements, however, water users should be charged its true marginal costs.

18. Integrated water resources management should follow four principal goals:

a. to promote a dynamic, interactive, iterative and multisectoral approach to water resources management which integrates technological, socio-economic, environmental and human health considerations

b. to plan the rational utilization, conservation and management of water resources based on community needs and priorities and within the framework of national economic development policy

c. to design, implement and evaluate projects and programmes which are both economically efficient and socially appropriate within clearly defined strategies, based on a full public participatory approach, including the participation of women and indigenous peoples in water management policy-making and decision-making at the community level as well as at the national, regional and global levels

d. to identify and strengthen or develop, as required, the appropriate institutional, legal and financial mechanisms to ensure that water resources development is a catalyst for sustainable social progress and economic growth.

19. The strengthening of national capacities to manage the resource and the role of government and local organizations in creating the enabling environment for efficient and equitable utilization of the resource are crucial. In the case of transboundary water resources there is an even greater need to formulate and harmonize water resources strategies and action programmes.

20. Although difficult to measure success in this area, quantitative targets could realistically be set as follows:

By the year 2000:

a. all developing countries will have designed and initiated costed and targeted national action programmes, and 75% of all countries will have appropriate institutional and legal structures in place.

By the year 2025:

b. subsectoral programme targets reached.

Activities

21. Countries, especially developing countries, with the assistance of relevant UN bodies and international donors, could implement the following activities to improve integrated water resources management in their countries:

a. formulation of costed and targeted national action plans and investment programmes

b. development of interactive databases, forecasting methods and economic planning models

c. optimisation of water resources allocation under physical and socio-economic constraints

d. Implementation of allocation decisions through demand management, pricing mechanisms and regulatory measures

e. flood and drought management using risk analysis and social impact assessment

f. promotion of schemes for rational water use through public awareness raising, educational programmes, levying of water tariffs and other economic instruments

g. development of new and alternative sources of water supply such as seawater desalination, artificial groundwater recharge, use of marginal-quality water, wastewater reuse and water recycling

h. integration of water quantity and quality management, including surface and underground water resources

i. promotion of water conservation and wastage minimization schemes for all users, including the development of water-saving devices

j. support to water users groups to optimize local water resources management

k. development of public participatory techniques and their implementation in decision making, particularly the enhancement of the role of women in water resources planning and management

l. development and strengthening, as appropriate, of implementation mechanisms at all levels concerned:

- at the global level improved delineation of responsibilities, division of labour and co-ordination of international organizations and programmes;

- at the regional level watershed-based organizations (river or lake basin authorities) and legal agreements for the joint management of transboundary water bodies;

- at the national level integrated water resources planning and management in the framework of the national planning process;

- at the local level delegation of water resources management to the lowest appropriate level, including decentralization of government services to local authorities, private enterprises and communities

m. elaboration, dissemination and application of operational guidelines in support of the implementation of national action plans and local water management schemes

n. capacity building, including the rationalization and strengthening of institutional and legal structures and the development of the necessary human resources basis.

B. WATER RESOURCES ASSESSMENT

Basis for action

22. Water resources assessment is the continuing determination of sources, extent, dependability, and quality of water resources. It is the practical basis for their sustainable

management and a prerequisite for evaluation of the possibilities for this development. There is, however, growing concern that at a time when more precise and reliable information is needed about water resources, hydrological services and related bodies are less able to provide this information, especially information on ground water and water quality. Major impediments are: the lack of financial resources for WRA, the fragmented nature of hydrological services and the insufficient numbers of qualified staff. At the same time the advancing technology for data capture and management is increasingly difficult to apply for developing countries. Establishment of national data bases is, however, vital to WRA and for mitigating floods and pollution.

Objectives

23. Based upon the Mar del Plata Action Plan, this programme area is extended into the 1990s and beyond with the overall objective:

> "To ensure the assessment and forecasting of the quantity and quality of water resources, in order to meet the needs of all sectors of society, to enable mitigation of water-related hazards, and to maintain or enhance the condition of the global environment."

Four specific objectives are set accordingly as follows:

a. to have all countries allocate to water resource assessment the financial resources which are justified by the economic and social value of information about their water resources;

b. to have all countries establish the institutional arrangements needed to ensure the efficient collection, processing, storage, retrieval and dissemination to users of information about the quality and quantity of available water resources in an integrated manner;

c. to make available to all countries water resource assessment technology which is appropriate to their needs, irrespective of their level of development, including methods for the impact assessment of climate change on freshwaters;

d. to have sufficient numbers of appropriately qualified and capable staff recruited and retained by water resource assessment agencies, and provided with the training and retraining they need to carry out their responsibilities successfully.

24. Quantitative programme targets can be set for the number of countries covered with adequate services:

a. by the year 2000 all countries should have studied in detail the feasibility of installing water resources assessment services;

b. by the year 2000 there should be water resources assessment services with a high-density hydrometric network installed in 70 countries, and services with limited but adequate capacity in 60 countries;

c. by the year 2025 there should be 110 countries with fully developed services, and 40 countries with services of a limited capacity;

d. the longer-term target is to have fully operational services, based upon high-density hydrometric networks, available in all countries.

Activities

25. Governments, with the assistance of relevant UN agencies, regional and international organizations and donor agencies, and through bilateral and multilateral agreements, could undertake the following activities:

26. a. increasing financial resources

- securing augmented budgetary allocations
- exploring novel ways of funding
- estimating the ecological, economic and social value of water resources data.

b. improving institutional arrangements

- facilitating close collaboration between water sector agencies, particularly between information producers and users
- reviewing the legislative and regulatory basis of WRA
- preparing catalogues of the water resources information held by government services, private sector, educational institutes, consultants, local water use organizations and others

- implementing water management policies based upon realistic appraisals of water resource conditions and trends.

c. upgrading and increasing technology transfer

- encouraging international organizations and donors to meet initially the immediate needs of the country commensurate with their technological standards
- developing strategies for meeting requirements over the medium and long term.

d. capacity building for WRA

- encouraging the provision of attractive terms of employment and career paths for professional and technical staff
- monitoring human resources needs and meeting them through education and training opportunities, and international programmes of courses and conferences
- strengthening the managerial capabilities of water users groups to improve water use efficiency at the local level.

C. PROTECTION OF WATER QUALITY AND AQUATIC ECOSYSTEMS

Basis for action

27. There are few regions of the world that are still exempt from problems of degraded water quality and the pollution of surface and groundwater sources. Problems which most affect water quality in developed and developing countries are domestic sewage and industrial waste discharges. In the rural areas, concern about the entry of fertilizers and pesticides into watercourses and groundwater aquifers is increasing. Aquatic ecosystems are disturbed and the living freshwater resources are threatened. Aquatic ecosystems are also affected by major and medium water resource development projects such as dams, river diversions, water installations and irrigation schemes. Erosion, sedimentation and deforestation have led to increased land degradation. Many of these problems have arisen from a lack of public understanding and education about surface and groundwater resource protection. Ecological and human health effects are the measurable consequences, although the means to monitor them are grossly inadequate or non-existent in many developing countries.

Objectives

28. Already the Mar del Plata Action Plan recognized the intrinsic linkage between water resource development projects and their important repercussions of a physical, chemical, biological and socio-economic nature. The overall environmental health objective was set:

> "to evaluate the consequences which the various users of water have on the environment, to support measures aimed at controlling water-related diseases, and to protect ecosystems".

29. Three objectives will have to be pursued concurrently to integrate water quality aspects into water resource management:

> a. maintenance of ecosystem integrity—a management principle to preserve aquatic ecosystems, including the living resources, and to protect them effectively from direct and indirect pollution;
>
> b. public health protection—a task requiring not only the provision of pathogen-free drinking water but also the control of disease vectors in the aquatic environment;
>
> c. human resources development—a key to capacity building and a prerequisite for implementing water quality management.

30. Three targets have been set to integrate water quality aspects into water resource management:

> a. by the year 2000 all countries should have effective water pollution control programmes, defined as enforceable standards for major point-source discharges and high-risk non-point sources, commensurate with their socio-economic development;
>
> b. by the year 2000 all countries should participate, as far as appropriate, in inter-country and international water quality monitoring and management programs such as the Global Water Quality Monitoring Programme GEMS/WATER, UNEP's Environmentally Sound Management of Inland Waters, FAO's regional inland fishery bodies, or the RAMSAR

convention on wetlands;

c. by the year 2025 the prevalence of water-associated diseases should be drastically reduced, starting with the eradication of dracunculosis (Guinea worm) by the year 2000 and onchocerciasis (river blindness) by the year 2000.

Note: activities for target (c) are included under D and in the chapter on human health aspects [PC/54].

Activities

31. All national governments, especially of developing countries, with the assistance of appropriate UN agencies and other international organizations, and in cooperation with the industrialised countries could embark upon the following activities:

a. water pollution control

- application of the polluter pays principle to all kinds of sources, including on-site and off-site sanitation
- introduction of the precautionary approach in water quality management
- mandatory environmental impact assessment on all major water resource development projects
- decisions to be based on risk assessment and risk management
- setting of water quality objectives and standards for pollution control
- preventive measures to avoid pollution through rational land-use planning
- controlled siting of industrial and waste facilities with regard to sensitive water bodies and aquifers.

b. Water quality protection requiring legal instruments

- monitoring and control of pollution in national and transboundary waters
- control of long-range atmospheric transport of pollutants
- control of accidental spills in national and transboundary water bodies
- environmental impact assessment

c. control of point-sources of pollution

- construction of treatment facilities for domestic sewage, drainage water and industrial effluents
- monitoring of all discharges of pollution to enforce compliance with standards, permits and other regulations.

d. control of diffuse pollution sources

- rational land use to prevent land degradation, erosion and siltation
- controlled use of agrochemicals to prevent eutrophication and chemical contamination of surface and ground waters.

e. application of clean technology

- control of industrial waste discharges, including low-waste production technologies and water recirculation
- treatment of municipal wastewater for safe reuse in agriculture and aquaculture
- development of biotechnology for waste treatment, production of biofertilizers etc.
- development of appropriate and indigenous methods for water pollution control.

f. groundwater protection

- mitigation of saline intrusion into aquifers of small islands and coastal plains as a consequence of sea-level rise
- prevention of aquifer pollution through the establishment of protection zones in groundwater recharge and abstraction areas
- design and management of landfills based upon sound hydrogeological information and impact assessment, using best available technology
- mandatory water quality monitoring, on a permanent basis, of surface and groundwaters potentially affected by landfills.

g. protection of aquatic ecosystems

- rehabilitation programmes for agricultural lands and for other users, taking into account equivalent action for the preservation and use of groundwater resources, important for agricultural productivity and for the biodiversity of the tropics
- rehabilitation of polluted and degraded water bodies to restore aquatic habitats and ecosystems

- conservation and protection of wetlands due to their ecological and habitat importance for many species as well as their socio-economic values
- control of noxious aquatic weeds which may destroy some other water species.

h. protection of freshwater living resources

- control of water quality to allow for the sustainable development of inland fisheries
- protection of ecosystems from pollution for the development of freshwater aquaculture projects.

i. capacity building for water quality management

- establishment and strengthening of institutional frameworks at national and local levels
- development of technical infrastructure for water quality monitoring, assessment and control to include capacity for standard setting, permits and effective enforcement at the national and local level
- training of professionals to enhance staff capabilities at technical and managerial levels
- dissemination of information to water users at all levels on, inter alia, ecosystems, the water cycle, water quality protection, source control measures and water-borne disease control
- awareness building on ecological and water quality issues at all levels.

D. DRINKING WATER SUPPLY AND SANITATION

Basis for action

32. Safe water supplies and environmental sanitation are vital for protecting the environment, improving health and alleviating poverty. An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused through the consumption of contaminated water and on average as much as one tenth of each person's productive time is sacrificed to water-related diseases. Concerted efforts during the 1980s brought water and sanitation services to hundreds of millions of the world's poorest people. The most outstanding of these efforts is the launching in 1981 of the UN International Drinking Water Supply and Sanitation Decade (IDWSS)

which resulted from the Mar del Plata Action Plan adopted by the UN Water Conference in 1977. The commonly agreed premise was that "all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs." The target of the IDWSS was to provide safe drinking water and sanitation to underserved urban and rural areas by 1990. But even the unprecedented progress achieved during this decade was not enough. One in three people in the developing world still lacks these two most basic requirements for health and dignity.

Objectives

33. The New Delhi Statement formalized the need to provide, on a sustainable basis, access to safe water in sufficient quantities and proper sanitation for all, requesting "some for all rather than more for some". Four Guiding Principles provide for the programme objectives:

a. protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes;

b. institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions;

c. community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes;

d. sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.

34. Past experience has shown that specific targets should be set by each individual country. At the Summit for Children in 1990, 71 heads of state or government called for both universal access to water supply and sanitation and the eradication of guinea worm disease by 1995. Even for the more realistic target to achieve full coverage in water supply by 2025, it is estimated that annual investments must reach double current levels. The only realistic strategy to meeting present and future needs, therefore, is to develop lower cost services that can be implemented and sustained at the community level.

Activities

35. All national governments, especially of developing countries, with the assistance of appropriate UN agencies and other international organizations, and in cooperation with the industrialised countries could embark upon the following activities:

a. the environment and health

- sanitary disposal of excreta and sewage
- expansion of urban water supply, sewage and drainage systems
- control of water-associated diseases
- treatment and reuse of domestic wastewaters

b. people and institutions

- changing the role of government towards decentralization, local authorities, private enterprises and NGOs
- human resources development at all levels, including special programmes for women
- broad-based education programmes, with particular emphasis on hygiene and local management
- international coordination mechanisms for programme funding and implementation

c. community management

- support to communities in owning and control of their own systems on a sustainable basis
- encouragement of women in water management
- linkages between national water plans and community management of local waters

d. finance and technology

- making service-agencies more cost-effective and responsive to consumer needs
- restructuring the utilization of funds with more attention to underserved rural and low-income urban areas
- rehabilitation of defective systems, reduction of wastage and reuse of water and wastewater
- programmes for operation and maintenance on the basis of cost recovery and

charging mechanisms

- research and development of appropriate technical solutions.

E. WATER AND SUSTAINABLE URBAN DEVELOPMENT

Basis for action

36. Early in the next century, more than half of the world's population will be living in urban areas. By 2025 that proportion will have risen to 60%, some 5 billion people. Rapid urban population growth and industrialization are putting severe strains on the water resources and environmental protection capabilities of many cities. Scarcity of freshwater resources and the escalating costs of developing new resources have a considerable impact on national industrial development and economic growth. Better management of urban water resources can make a substantial contribution to the alleviation of poverty and improvement of the health and quality of life of the urban poor. A high proportion of urban agglomerations are located on estuaries and in coastal zones. The resulting pollution from municipal and industrial discharges combined with overexploitation of available water resources contaminates the marine environment and threatens future supplies.

Objectives

37. The development objective of this programme is to support local and central governments' efforts and capacities to sustain national development and productivity through environmentally sound management of water resources for urban use. Supporting this objective is the identification and implementation of strategies and actions to ensure the continued supply of affordable water for present and future needs, and to reverse current trends of resource degradation and depletion.

38. The following targets have been set:

By the year 2000:

a. All urban residents have access to at least 40 litres per capita and day of safe water and 75% are provided with on-site or community facilities for sanitation.

b. All countries establish and apply quantitative and qualitative discharge standards for

municipal and industrial effluents.

c. 75% of solid waste generated in urban areas is collected and disposed of in an environmentally safe way.

By the year 2025:

d. All countries have established biological, physical and chemical quality criteria for all water bodies (surface and groundwater).

e. Biological, physical and chemical quality of water bodies is demonstrating steady improvement.

Activities

39. Countries, through regional and international cooperation, and with the support of NGOs and the private sector, could undertake the following activities:

a. protection of water resources from depletion and degradation

- introduction of sanitary waste disposal facilities based on low-cost upgradable technologies
- implementation of urban storm water runoff and drainage programmes
- promotion of recycling and reuse of waste-water and solid wastes.

b. efficient and equitable allocation of water resources

- reconciliation of city development planning with the availability and sustainability of water resources
- introduction of water tariffs which reflect the marginal and opportunity cost of water, while ensuring satisfaction of basic needs

c. institutional/legal/management reforms

- adoption of a city-wide approach to the management of water resources
- incorporation into municipal agencies plans of land and water management, housing and other urban development programmes
- utilization of the skills and potential of non-governmental organizations and the private sector

d. promotion of public participation

- initiation of public awareness campaigns to promote water conservation
- sensibilization of the public for the protection of water quality within the urban environment
- activation of public participation for the collection and recycling of wastes

e. support to local capacity building

- promotion of investments in urban water and waste management reflecting the major contribution of cities to national economic development
- provision of seed money and technical support to the local handling of materials supply and services
- encouragement of autonomy and financial viability of city water and sewerage utilities
- creation and maintenance of a cadre of professionals and semi-professionals for water, wastewater and solid waste management.

F. WATER FOR SUSTAINABLE FOOD PRODUCTION

Basis for action

40. Sustainability of food production increasingly depends on sound and efficient water use and conservation practices consisting primarily of irrigation development and management including water management in rainfed areas, livestock water supply, inland fisheries and agro-forestry. Rural development requires the integrated satisfaction of basic needs for drinking water and for food production. While significant expansion of the area under rainfed agriculture has been achieved during the past decade, the productivity response and sustainability of irrigation systems have been constrained by problems of water-logging and salinization. Soil erosion in the upper watersheds, mismanagement and over-exploitation of the natural resources in the drought-prone areas and acute competition for water, have all influenced the extent of poverty, hunger and famine in the developing nations. The development of irrigation schemes is most often not supported by environmental impact assessments identifying hydrological consequences within watersheds and due to interbasin transfers.

Objectives

41. An International Action Programme on Water and Sustainable Agricultural Development (IAP-WASAD) has been initiated by FAO in cooperation with other international organizations. The main objective of the IAP-WASAD is to assist developing countries in planning, developing and managing water resources on an integrated basis to meet the present and future needs for agricultural production, taking into account environmental considerations.

42. The IAP-WASAD has developed a framework for sustainable water use in the agricultural sector and identified priority areas for action at national, regional and global levels. Quantitative targets for new irrigation development, improvement of existing irrigation schemes and reclamation of waterlogged and salinized lands through drainage for 94 developing countries are estimated on the basis of food requirements, agro-climatic zones and availability of water and land.

43. [Objectives for livestock, inland fisheries and aquaculture to be inserted. References: PC/61 and PC/69.]

44. The projections for irrigation are as follows:

By the year 2000:

a. 21 million hectares of new irrigation development
b. 17 million hectares of improvement/modernization of existing schemes
c. 10 million hectares installed with drainage and water control facilities
d. 15 million hectares of small-scale irrigation water programmes and conservation.

45. The development of new irrigation areas at the above level may give rise to environmental concerns as this may imply the destruction of wetlands and a reduction in biodiversity. Before developing new irrigation schemes, efforts should be made towards a more rational exploitation of existing schemes, including increased efficiency and productivity. The active involvement of water users groups is a supporting objective.

46. [Quantitative targets for livestock, inland fisheries and aquaculture to be inserted.

References: PC/61 and PC/69.]

Activities

47. Countries, especially developing countries, with the cooperation of the private sector and NGOs, could undertake the following activities to protect their water resources from depletion and degradation:

a. water use efficiency

- increase of efficiency and productivity in agricultural water use for better utilization of limited water resources
- strengthening of water and soil management research under irrigation and rainfed conditions
- monitoring and evaluation of irrigation project performance
- support to water users groups with the aim to improve management performance at the local level

b. waterlogging, salinity control and drainage

- introduction of surface drainage in rainfed agriculture to prevent temporary waterlogging and flooding of lowlands
- introduction of artificial drainage in irrigated agriculture
- encouragement of conjunctive use of surface and groundwaters, including monitoring and water balance studies

c. water quality management

- establishment and operation of cost-effective water quality monitoring systems for agricultural water uses
- prevention of adverse effects of agricultural activities on water quality for other uses
- establishment of biological, physical and chemical water quality criteria for agricultural water users

d. small-scale water programmes

- development of small-scale irrigation, water supply for humans and livestock and

for water and soil conservation

- promotion of local initiatives for the integrated development and management of water resources
- provision of adequate technical advice and support and enhancement of institutional collaboration at the local community level

e. scarce water resources management

- development of long-term strategies and practical implementation programmes for agricultural water use under scarcity conditions with competing demands for water
- recognition of water as an economic good in irrigation planning and management
- formulation of specialized programmes focused on drought preparedness with emphasis on food scarcity, environmental safeguards and community resilience
- promotion and enhancement of wastewater reuse in agriculture

f. supporting capacity building

- development of adequate data bases and adaptive research
- institutional strengthening based upon human resources development at all levels, in particular water users groups
- transfer of existing water use technologies and support of their field application.

Note: Activities concerning livestock, inland fisheries and aquaculture to be added. References: PC/61 and PC/69.

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Working Group II
Agenda item 2

PROTECTION OF THE OCEANS, ALL KINDS OF SEAS INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

Draft decision proposed by the Bureau

A. Options for Agenda 21

The Preparatory Committee,

1. Welcomes the reports of the Secretary-General of the Conference on Protection of Oceans, All Kinds of Seas Including Enclosed and Semi-enclosed Seas, Coastal Areas and the Protection, Rational Use and Development of their Living Resources (A/CONF.151/PC/69) and the Options for Agenda 21 on Oceans (A/CONF.151/PC/42/Add.6). Requests the Secretary-General of the Conference to consolidate and integrate related programme areas and rationalize their presentation for consideration at its fourth substantive session. The Committee requests the Secretary-General of the Conference to take into consideration inter alia all relevant paragraphs of General Assembly resolution 44/228, the relevant resolutions taken at the first and second substantive sessions and the decisions taken at the present substantive session in the preparation of a draft Agenda 21 section on Oceans:

(a) The need to include the requests made hereunder into the Options for Agenda 21 on Oceans as amended at the third substantive session of the Preparatory Committee and annexed to this decision;

(b) To further develop the five programme areas for oceans, as given in the annex in relation to Means of Implementation/Resource Requirements: Human Resource Development, Scientific and Technological Infrastructure Development, and Costing and Financing and the role of different international organisations in implementation, incorporating the suggestions and comments from delegations.

2. As concerns the intergovernmental meeting of experts on land-based sources of pollution to be convened by UNEP in coordination with the UNCED secretariat, the Preparatory Committee invites the Executive Director of the United Nations Environmental Programme to report the results of this meeting to the Secretary-General of UNCED on time to be presented at its fourth substantive session.

Annex

Chairman's Working Paper

(Revised version of document A/CONF.151/PC/42/Add.6)

AGENDA 21

[GENERAL OBJECTIVES]

[1. The marine environment --including the oceans and adjacent coastal areas-- forms an integrated whole that is an essential component of the global life support system. It should be viewed as a positive asset presenting opportunities for sustainable development. Management of its environmental quality and ecological integrity is a prerequisite for ensuring the sustainable use and development of its resources.

[2. Principles of]The United Nations Convention on the Law of the Sea (UNCLOS) provides [the international framework within which][basis] to pursue the protection and sustainable development of the marine environment. [UNCLOS] contains generally accepted rights and obligations of States with respect to the marine environment. Implementation of those rights and obligations constitutes the objective of this part of Agenda 21 dealing with the oceans.]

[2 The Law of the Sea Convention has introduced new global legal regime, although it lacks the necessary ratifications to enter into force, provides a solid legislative base to govern many international relationships and for ocean management. However, at least two levels need to be harmonized in the management of oceans and coastal areas. The first level is the coastal areas and Exclusive Economic Zones (EEZs), where Governments have certain rights and responsibilities within national jurisdition. The second level is the high seas, which require different cooperative arrangements at the global, regional and nationall levels. Legal and economically focused management regimes must be adjusted so as to incorporate both levels and to take account of political and administrative boundaries as well as the variety of physical and biological units being managed e.g. large marine ecosystems, marine catchment basins and species ranges. The oceans and coastal areas should be viewed as positive assets presenting opportunities for sustainable development. This requires an integrated approach at national, regional and international levels. The overall goal is to maintain the oceans as a functional part of the global life support system, as a productive resource, and as a current and future asset for multiple sustainable development and environmental benefits so as to meet the well-being of present and future generations.]

Note: The underlined text corresponds to the new proposed texts by delegations.

The numbers at the end of the paragraphs indicate the original para. of doc. A/CONF.151/PC/42/Add.6.

3. Within this framework, achievement of the protection and sustainable use of the marine environment requires new approaches to ocean management, at the national, regional and international levels,-approaches that are integrated in content and precautionary and anticipatory in ambit. The overall goal is to ensure that the oceans provide environmental and economic benefits for the well-being of present and future generations.
This goal includes:

[- integration of protection of the marine environment into/and overall economic development policies taking into account changes in value resulting from uses of the [coastal and] marine environment;]

[- Rational use of the marine environment to provide the full requirements for a sustainable development]

- prevention, reduction and control of pollution [and other type of degradation] of the marine environment, including coastal and marine ecosystems;

- preservation of the biological diversity and productivity of marine species, [habitat] and maintenance of the ecological relationships among populations of such species.]

[3bis To achieve these goals, the United Nations General Assembly could accomplish the following actions:

= Training al all levels, in the short, medium and long term of human resources for research, technology and management of coastal areas marine resources.

- Infrastructure Development and;

- Assignment of the necessary funds.

PROPOSED PROGRAMMES AREAS

Agenda 21 for oceans includes the following programme areas:

A. INTEGRATED MANAGEMENT [AND SUSTAINABLE DEVELOPMENT] OF COASTAL AREAS AND [MARINE ECOSYSTEMS][EXCLUSIVE ECONOMIC ZONES]

B. [MARINE ENVIRONMENTAL PROTECTION][MARINE POLLUTION, PREVENTION AND CONTROL: LAND-BASED AND SEA-BASED ACTIVITIES]

1 Prevention, Reduction and Control of Degradation of the Marine Environment from Land-based Activities
2 Prevention, Reduction and Control of Degradation of the Marine Environment from Sea-Based Activities
3 Prevention, Reduction and Control of Degradation of the Marine Environment from other Sources

C. MARINE LIVING RESOURCES [SUSTAINABLE UTILIZATION ON THE HIGH SEAS AND UNDER NATIONAL JURISDICTION]

1 High Seas [HIGH SEAS AND NATIONAL JURISDICTION]
2 National Jurisdiction]

[C. MANAGEMENT OF HIGH SEAS: LIVING MARINE RESOURCES
D. SUSTAINABLE USE OF LIVING MARINE RESOURCES UNDER NATIONAL JURSIDICTION.]

D[E]. ADDRESSING CRITICAL UNCERTAINTIES [FOR OCEAN MANAGEMENT] AND CLIMATE CHANGE

E[F]. STRENGTHENING INTERNATIONAL, INCLUDING REGIONAL COOPERATION AND COORDINATION

[G. HUMAN RESOURCE DEVELOPMENT FOR OCEAN [AND COASTAL] MANAGEMENT]
Human Resource Development
Scientific and Technological Infrastructure Development
Costing and Financing]

Each Programme Area will include the following components:

Basis for actions

Objectives

Activities

Management-related
Data and Information
Capacity Building
International and Regional Cooperation and Coordination

[Means of Implementation/Resource Requirements

Human Resource Development
Scientific and Technological Infrastructure Development
Costing and Financing]

[Means of Implementation

Financing and Cost Evaluation
Scientific and Technological Means
Human Resources Development
Capacity Building of Developing Countries for Preventive and Corrective Action in the Field of Environment Protection and Promotion of Development].

A. INTEGRATED MANAGEMENT [AND SUSTAINABLE] DEVELOPMENT OF COASTAL AREAS AND [MARINE ECOSYSTEMS][EXCLUSIVE ECONOMIC ZONES].

Basis for action

4. The coastal area is important for human settlements and for development through agriculture, forestry, fisheries and aquaculture, various industries, port development, shipping, marine and coastal transport, shore protection, tourism and recreation, national security, waste disposal and conservation of marine ecosystems. The Economic Exclusive Zone (EEZ) is also very important for people and for development because in this area the coastal States exercise an active protection on the natural resources. Despite efforts at national, regional and international levels, the current sector and discipline oriented approach to the multiple use of marine and coastal resources does not provide an effective framework for achieving sustainable development. A holistic, multidisciplinary and inter-sectoral approach to planning and management is required in coastal areas (particularly in island States, low coastal countries, enclosed and semi-enclosed seas) to identify and deal with potential interactions; allocate resources; anticipate and avoid conflict; minimize environmental degradation and face the challenge of potential climate change. There is an opportunity to optimize the sustainable use of the coastal and EEZs areas and resources, building on the experience of regional programmes.(12)

[4bis Problems extend beyond fisheries. Coral reefs and other largerly tropical coastal habitats such as seagrass communities, mangroves and estuaries among the most highly diverse, integrated and productive of the earth's ecosystems. They often serve important ecological functions, provide protection from hazards of the open sea, and are critical natural resources for food, energy, and economic development. In various parts of the world such coastal and marine systems are under stress or threatened due to factors ranging from local cultural practices to changes in sea temperature and or sea level.]

Objectives

5. Integrated management should provide the developing needs of coastal states, making full and cost effective use of natural resources, while maintaining and enhancing those resources for the use of future generations.

6. Assess, plan and manage on a rational economical base, the sustainable development of the coastal and the EEZ areas and their resources while protecting, restoring and enhancing its productivity and conserving its biodiversity, regulating access to resources and rates of use, promoting environmentally safe technology, ensuring compatibility among sectoral developments, cooperating on transboundary issues and assessing effects of potential climate change, particularly the sea level rise.(13)

7. Agree on guidelines for integrated coastal zone and the EEZs area management and development by 1994, and establish at national, regional and global levels integrated planning management and development processes for sustainable use of coastal zones and EEZs by the year 2000.(14)

8. Adopt programmes on the establishment of protected areas and other measures to maintain especies and their habitats in coastal areas and EEZ.

9. Establish a unified policy framework and intergovernmental mechanisms for coastal and EEZ natural resources management and development. Coordination should be promoted with governmental organizations, decision-makers, academic and private sectors, NGO's, local population and other users for this matter.(64(a))

10. Enhance the coordination for coastal and EEZs issues and introduce cooperative mechanisms.(57)

11. Introduce, for regional bodies, new arrangments to ensure effective coordination in the fields of environmental protection, fisheries [marine resource utilisation] and development. [Provisions of mechanisms to facilitate the sustainable exploitation of the EEZs and the resources contained therein to meet the needs of the people.](58)

Activities

Management-Related

12. Develop a Policy and Planning Framework. Each coastal State could establish a high-level planning body or a national coordinating mechanism involving with the governmental organisms the academic and private sector and the local populations for integrated coastal and EEZ management and development. The main activity could be to develop integrated programmes and implement master/integrated coastal and EEZ plans, as part of development plans that could include the following:(15)

(a) Appropriate legal framework for permits, licences and enforcement measures, allocation of resources and space, for banning of environmentally harmful fishing gears [exploitation practices] and for liability and compensation provisions. Environmental impact assessment procedures could be made mandatory;
(b) [Programmes for operative environmental assessment] [Environmental assessment programmes identifying the causes of degradation of the marine environment as well as measures to prevent or correct such degradation.
(c) Contingency plans for man-induced and natural disasters, taking into account the likely effects of potential climate change and sea level rise. Prior assessment of the potential significant adverse environmental impacts of major governmental policies, programmes and projects upon the coastal and the EEZ environment. The plans could include actions to restore altered critical habitats and living conditions of endangered species;
(d) Sectoral programmes addressing sustainability issues in each sector using the coastal area or impacting on it e.g. human settlements, tourism, fishing, ports and industries;
(e) Finance management systems, including accounting systems for coastal resources, allocation schemes and establishment of explicit user's rights and fees and investments, encouraging environmentally safe uses and rehabilitation and shifting from overcapitalized activities.
[(f) Public education and information programme to facilitate plan formulation, implementation and review.]

13. Coastal States could establish protected areas in coastal and EEZ ecosystems which are important because of their high species diversity or role as nursery and recruitment grounds for fish in particular coral reefs, seagrass beds, mangroves, coastal lagoons, estuaries and other coastal wetlands, including an inventory of endangered species and critical coastal and marine habitats and, where appropriate, protect them through national legislation.(33)

(a) Members States could support scientific research on and monitoring of resources of these marine areas; particularly in areas of high diversity, endemism, productivity and spawning, recruitment, nursery grounds and migratory stopover points.
(b) Non-governmental organizations could assist countries in enhancing public awareness of the importance of marine biodiversity.
(c) Countries could implement national regulations to control the introduction of new species for aquaculture, which may have adverse effects on the ecosystem.
[(d) Limited use of resources in protected areas could be allowed statutorily if their use is justified by tradition.]

[13bisSpecial measures [based on the best available scientific information], to preserve the habitats of marine species and designation of areas of the marine environment for special protection in order to:

a) Protect rare or fragile ecosystems;
b) Preserve or restore breeding, spawning, nursery and high biodiversity areas such as coral reefs, seagrass beds, mangrove forests and other highly productive habitats.
c) Preserve or restore their scientific, wilderness, recreational or aesthetic values.
d) Monitor changes in the marine environment.
e) Preserve unique opportunities for scientific research.

Monitoring of changes to coral reefs and other marine life that threaten their ecological, economic and social value.]

International and Regional Cooperation and Coordination

14. Develop Technical Capacity for preparing policy interventions in support of integrated coastal and EEZs management.(17)

(a) International and regional organizations could help countries develop enforcement capacity for monitoring, control and surveillance. Reference is made to document entitled Global Ocean Observing System (A/CONF.151/PC/70).
(b) The coastal States with the cooperation of the relevant United Nations bodies and non-governmental organisations, could establish geographical information systems including appropriate data bases, statistics, maps and resource inventories particularly in sensitive areas and create a coastal multi-purpose monitoring system to assess the potential of coastal areas resources and their status.
(c) Regional programmes could organize data networks with information about a critical mass of scientists and technicians for multi-disciplinary research and management of coastal and EEZ systems.

15. Set Up a Regional Coordinating Mechanism on coastal and EEZ development bringing together relevant international agencies, regional programmes, and donors including the regional development banks. Regional bodies could develop guidelines for improving compatibility between ecological and socio-economic concerns and among sectors, for restoring degraded natural systems to productive use and social benefit, and for transferring clean production technologies into coastal and EEZ development projects.(16)

Data and Information

16. Enhance the capacity of the developing countries for the acquisition and availability of information and data adequate for prior assessments of the potential significant adverse environmental impacts of [and informed judgments] about major governmental policies, programmes and projects affecting the coastal and EEZ environment.

To improve the information base, it is necessary to:

a) Assess the fishing resources [marine resources].
b) Rationalize and expand the data base available in most countries for management of coastal seas resources, with specific needs in mind. In particular, strengthen global coastal shelf and ocean observing systems, as proposed by IOC, UNEP and WMO need developing or strengthening.
c) Assess technologies and information systems available to developing countries for storage and processing of data and for resources mapping, analysis and characterization (including remote sensing, coastal observing systems, etc). In particular, develop Geographic Information Systems (GIS) including appropriate training and equipment.
d) Assess present status of coastal zones urgently, including diagnostics on eutrophication, occurrence of coral bleaching, red tides, "ciguatera", bacteria at beaches, nitrification and salination of groundwater, fish abundance, habitat degradation levels, identification of local and upstream impacting activities (agriculture and others), wetland obliteration, etc.
e) Prepare inventories (atlases) of present and potential activities in the coastal areas (including human settlements), or with impacts on such areas, in order to identify compatible or mutually exclusive activities and problem areas. Identify boundaries for specific pilot projects and zoning purposes.
[f) Prepare inventories (atheses) of present and potential resources and activities in the EEZs.][Delete]

Capacity Building

17. Member States could create an interministerial mechanism, within the national planning and development bodies, for policy-making and long-term planning on EEZ and coastal areas. The main tasks could include the following:

(a) Rationalize and/or coordinate sectoral responsabilities for EEZ and coastal areas within Governments and establish a reviewing mechanism to update and enforce relevant national legislation to EEZ/marine management and coastal development.

(b) Establish advisory bodies for broad consultation to stimulate participation with local administrations, the business community, the academic sector, user groups and the general public.
(c) Include institutional capacity building in agreements between development aid bodies and developing country institutions.(66)

18. Coastal States could organize training and extension programmes for resources users including fishermen, women, and incorporate ocean issues and management in educational curricula and public awareness campaigns. Indigenous peoples could be supported to maintain and apply their traditional knowledge of the coastal environment and marine resources.(67)

19. Relevant global and regional agencies should cooperate with coastal countries in improving the scientific, technological, professional and related institutional capacities.

(a) Identify existing capabilities and existing facilities within the countries of the region; determine the needs of human resources, the scientific and technological infrastructure required and potential for expansion in regional marine and coastal areas research, training, management and technologies.
(b) Establish and maintain regional centres capable of assisting countries in analyzing information and assessing the principal environmental problems, in reinforcing surveillance and implementing environmental impact assessment and monitoring programmes with predictive capabilities.
(c) Prepare national and regional contingency and emergency plans, standard techniques for monitoring species and habitats and develop geographic information systems for spatial planning in coastal areas. To establish the appropriate legislation to protect the marine and coastal ecosystems.
(d) Create special programmes to assist island States to integrate environment and development in the planning process for their limited areas and resources.
(e) Establish programmes on marine environmental education and enhance public awareness of the role of the marine environment for society.(68)

Means of Implementation/Resource Requirements
20.

a) Development of human resources, regional and international institutions related to the subject should help developing island countries to improve their scientific and technical capacities for the integrated management of their coastal areas and EEZs, according to the following:

- Define and implement regional training programs on integrated management of coastal areas and EEZs with the participation of local and regional research centres, as well with the native comunities.

- Establish geographical information networks as a support for activities related to the integrated management of coastal and marine areas.

b) Develop scientific and technological infra/estructure.

- The appropriate regional and international institutions could assist member States with support resources for the habilitation of monitoring and research centres, as information networks, specially in developing countries.

c) Cost and financing.

The cost and funding of the programs to implement and integrated management and development of coastal areas and EEZs should be met by coastal States with the help of special funds provided by donor States and institutions, as the World Bank and other regional financial institutions.

B. [MARINE ENVIRONMENTAL PROTECTION][MARINE POLLUTION, PREVENTION AND CONTROL: LAND-BASED AND SEA-BASED ACTIVITIES]

Basis for Action

21. Anthropogenic degradation of the marine environment can result either from a lack of, or an excess, of economic and industrial growth. The size and distribution of human population, particularly in coastal areas, the patterns of land use [agriculture, forestry, fisheries, urban development] and industry, and the extent to which these activities are managed can impact negatively or positively on the marine environment. Recognition of the anthropogenic sources as basic causes of marine degradation is a crucial step towards effective solutions.

22. A wide range of activities on land contribute to degradation of the marine environment. Of the contaminants to the sea, 40% arrives via rivers and 30% via the atmosphere, while maritime and dumping activities contribute 10% each. The bulk of contaminants remain in coastal waters. The contaminants from land-based sources posing the greatest threat to the marine environment are sewage, nutrients, synthetic organic compounds, [particularly pesticides and herbicides] sediments, litter, metals, radionuclides, oil/hydrocarbons, and polycyclic hydrocarbons (PAH's). Soil erosion presents an additional source of harmful inputs.(35)

23. An anticipatory rather than a reactive approach is necessary to protect the marine environment. This will require the utilization of clean production techniques, policies to minimize wastes, improved sewage treatment and a comprehensive, sequential and coordinated approach involving all sectors including air, land and water interactions. Each coastal country should adopt, in accordance with its capabilities, precautionary measures to prevent, reduce and control pollution [and other forms of degradation of the marine environment from land-based acitvities] from land-based sources. [Any management framework must include waste audits, cleaner technologies, classification of substances, establishment of quality criteria, environmental impact assessment,] [Any management framework must include the enhancement and improvement of housing conditions and quality in ports and coastal zones in developing countries, due environmental impact assessment of new industrial site development for processes which include handling of chemicals and other

substances harmful and/or toxic to the marine environment] comparison of options, monitoring, and integrated management [and development] of coastal areas and EEZ.(36)

24. The substances involved in marine pollution caused by shipping and maritime activities vary enormously in quantities and potential harm to the oceans. In tonnage terms and visual impact the most important pollutant is crude petroleum and its derivatives. Of the approximately 600,000 tons of oil entering the oceans each year from maritime activities less than 25% is from major tanker accidents. A much larger quantity of oil is discharged as a result of normal shipping operations, e.g. pumping of bilges, tank cleaning and deballasting. The heavy concentrations of such residues in coastal areas give rise to chronic pollution, lowering aesthetic and recreational value. Offshore oil operations give rise to polluting discharges from separation of water from recovered oil and the disposal of drilling mud. Oil-well blow-outs can result in oil spillage of catastrophic proportions. There is currently no global regulatory regime for the prevention and control of pollution from offshore oil activities and only four regions have considered the adoption of legal instruments in this regard e.g. N.W. Europe in the Paris Convention, the Kuwait Action Plan Area's Kuwait Protocol, the Caribbean Countries' and the Mediterranean Countries' Barcelona Protocol now under consideration.(43)

25. On the other hand, many chemicals carried by sea are intrinsically far more harmful to the marine environment. Some can bio-accumulate in quantities that present a danger to human health, while others taint fish, making them unsuitable for human consumption. Of the global merchant fleet of approximately 70,000 ships, some 7,000 are tankers. The global chemical tanker fleet has doubled in the past 10 years to approximately 1,000. A substantial volume of other chemical products are carried in packaged form such as drums or in especially constructed containers. Up to 15% of goods carried in dry cargo ships are dangerous to some degree. These, together with liquid substances carried in oil and chemical tankers, make about half of the total cargo carried by the sea.(44)

26. Another cause of pollution is that arising from disposal of wastes at sea. Plastics and other solid wastes are extremely persistent and potentially harmful if ingested by seabirds and marine mammals. By changing industrial processes and the use of recycling methods and improved waste treatment techniques the amounts of wastes dumped at sea have been reduced. In spite of these efforts, disposal at sea of certain waste types, particularly uncontaminated dredged materials, continues to be considered practical and environmentally acceptable. More attention must be paid to the selection of dumping sites, dumping techniques and monitoring programmes and the application of hazard assessment techniques within a licensing regime which can provide the necessary level of marine pollution prevention and control.(45)

27. In addition to the environmental impact of oil spills there are frequently economic repercussions for coastal communities or small countries reliant on the resources of the sea. Automatic financial access to resources to cover clean-up costs and economic damage through liability and compensation regimes have done much to mitigate the effects of accidental oil pollution by facilitating prompt and effective counter-pollution operations.(46)

[27bis. Wider ratification by coastal States of the relevant conventions, and the extension of the existing regimes to cover pollution caused by substances other than oil is essential. Specific objectives could be considered and developed in the following areas:

(a) International ratification and implementation of shipping conventions and more rigorous enforcement of the discharge provisions, eg. through port State control. Coastal nations, on the basis of guidelines issues by International Maritime Organization, and assisted by same, could aim to establish by 1997 port facilities for the collection and disposal of waste oil, chemical residues and garbage, especially in sensitive sea areas where ships are not permitted to make discharges. This would require substantial funding.

(b) Encourage States to ratify [and finalize the future strategy of] the London Dumping Convention by 1994.

(c) Develop an international regulatory global framework for offshore oil discharges, safety and disposal activities by 1995.

(d) Implement liability and compensation regimes covering pollution damage from shipping and dumping activities, the immediate goal being the development of a regime for hazardous and noxious substances carried by ships.(47)

[(e) Improve living conditions of port and coastal human settlements in developing countries, and give special attention to adequate housing and sewage.]

(f) Technical and scientific capacity building and enhancement of research centers for systematic observation of marine pollution in developing countries, managed and staffed with experts from the concerned developing country.]

28. In addition to pollution, many [development][economic] activities directly and indirectly adversely affect marine resources. For example, industrial and residential development, [including touristic and recreational building] can destroy natural habitats [dredging mangroves and similar areas] by filling wetlands channelization, and construction of dams [and other coastal infrastructure]. Unsustainable agricultural, forestry and construction practices can increase levels of sediment in coastal areas, thereby negatively affecting many organisms, such as coral reefs and shellfish. Conversion of mangroves, forests and other low-lying lands to mariculture not only destroys productive natural systems, but can also lead to introduction of non-indigenous species.

Objectives

29. The protection of the marine environment against the adverse effects of human activities [and human development] so as to conserve marine ecosystems and to safeguard human health while providing for rational use of living and non-living resources. In so doing, it is necessary to:

(a) Ensure the proper integration of environment and development concerns.
(b) Recognize the difficulties of developing countries in implementing such strategies.

30. Accordingly, States, acting individually and through appropriate regional and international fora, agree to:

(a) Coordinate and integrate [and develop] measures to achieve marine environment protection and conservation through appropriate local, national, regional, and global mechanisms [and policies].
(b) Adopt and implement, as a matter of priority, precautionary measures to prevent, reduce, and control degradation of the marine environment from land-based and sea- based activities.
(c) Use economic measures, clean technology, and sustainable resource management to limit industrial and agricultural practices that threaten the marine environment.
(d) Maximize best practicable control and reduction of toxic, persistent, and bio-acumulative pollutant discharges.
(e) Restore degraded habitats so that they provide a sustainable marine ecosystem.

Activities

B.1. PREVENTION, REDUCTION AND CONTROL OF DEGRADATION OF THE MARINE ENVIRONMENT FROM LAND-BASED ACTIVITIES

Management-Related Activities

31. The following goals and essential programme elements are necessary components of a comprehensive strategy to protect, conserve, prevent, reduce, and control degradation of the marine environment from land-based activities.(37)

32. Suggested specific objectives include:

(a) Identify existing institutional and technical impediments to conserving the marine environment.
(b) Adoption of a global management [and development] framework by 1994; [The functioning by 1994 of a global framework for intergovernmental cooperation with close links to regional conventions and action plans.]
(c) Strengthen and develop national and regional integrated action plans such as the United Nations Environment Programme Regional Seas Programmes [and the Intergovernmental Oceanographic Commission by 1995;

33. States may wish to consider the following incremental steps:

(a) Agreed principles and programmes, building on the existing Montreal Guidelines, with the appropriate funding and technical support where applicable, at the national, regional and global levels, including possible establishment of appropriate standards.
(b) A formal declaration or charter to be adopted at UNCED.
(c) A global convention to formulate principles and standards with provisions for the institutional machinery to implement the convention. The Montreal Guidelines, complemented and amended as appropriate, could serve as the basis for the convention.(38)

34. Coastal states should establish in regional and national action plans, [reduction programmes for inputs from land-based activities] into the marine environment, [in order to achieve] [acceptable quality of the marine environment] together with target dates and financial mechanisms. While obvious global priorities exist both national and regional differences in terms of knowledge, viewpoints, infrastructure and technology, require different emphasis throughout the world. Countries should adopt precautionary approaches to development and management. Such approaches could involve a reduction of [effluents and] emissions, through, inter alia, improved housekeeping practices, greater treatment and recycling, and the introduction of cleaner production technologies. In both developed and developing countries, priorities should include appropriate sewage and industrial effluents treatment and disposal, synthetic organic compounds, and non-point runoffs. As well, priority attention should be given to pollution from land-based sources which reach the oceans via the atmosphere.(39)

35. As concerns sewage, priority actions in this area include:

(a) Building sewage treatment facilities [and safeguarding the maintenance and operation of treatment plants] [in accordance with national policies, capacities and international cooperation available].
(b) Entry of non-domestic effluent to sewers containing contaminants (such as heavy metals) should be strictly controlled so as not to preclude productive uses of sewage and not exclude the possibility of environmentally sound co-treatments of domestic and compatible industrial effluents.
(c) Municipal sewage [and industrial effluents] discharged to rivers, estuaries and the sea should, as a minimum, be subject to primary treatment.
(d) Coastal outfalls should be located so as to avoid exposing shell fisheries, water intakes and bathing areas to pathogens.(40)
(e) Cooperation in the development of minimum sewage effluent guidelines and water quality criteria for municipal [and industrial] wastes.
[(f) Settlement plans should be formulated or reviewed taking into account sewage concerns including resettlement of heavily populated coastal and riverbank areas.]
[(g) The establishment of regulatory and monitoring programmes to control effluent discharge, using appropriate risk and environmental impact assessments.]

[36. As concerns wastes, the main elements to be considered by coastal countries are:]

(a) Regulatory and monitoring programmes to control effluent discharge, using appropriate risk and environmental impact assessments.
(b) New ["prior informed consent" policy] [prior notification and consultation] initiatives at national and regional levels for controlling the input of non-point source pollutants, including sediments, which requires broad changes in sewage and waste management, shifts in agricultural practices, and environmentally compatible approaches to mining, construction and transportation practices.
(c) A review and control regime of loads (fluxes) of nitrogen and phosphorus entering the marine environment. (41) Taking into account different national capacities.

[(d) Assistance to developing countries to develop land-based waste disposal systems to preclude sea-dumping through financial support and transfer of environmentally sound technology.]

37. As concerns pollution from non-point sources:

(a) Cooperation in the development of land-use techniques, particularly buffer zones, along estuaries and water courses to limit agricultural runoff;
(b) Promotion of bilaterally and multilaterally through international development organizations and industry the use and application of environmentally sound pesticides and fertilizers (e.g., minimum toxicity and bio-accumultation standards).
(c) Elaboration of best environmental practices to prevent degradation.
[(d) Adoption of new ["prior informed consent" policy][prior notification and consultation] initiatives at national and regional levels for controlling the input of non-point source pollutants, including sediments, which requires broad changes in sewage and waste management, shifts in agricultural practices, and environmentally compatible approaches to mining, construction and transportation practices.
(e) Establish a review and control regime of loads (fluxes) of nitrogen and phosphorus entering the marine environment. Taking into account different national capacities.]

38. Countries could adopt a declaration at UNCED 1992 on land-based sources [a set of principles on prevention, reduction and control of degradation of the marine environment by land-based activities] following the recommendations of the Halifax and UNEP Intergovernmental Meetings of Experts. This could include specific elements for a subsequent global strategy and action plan on marine environmental degradation from land based activities. An Intergovernmental Meeting of Experts on Land-based Sources of Marine Pollution will meet again toward the end of 1991, following the decision of the UNEP Governing Council at its Sixteenth Session. This meeting could support the UNCED Preparatory Process by helping in the articulation of UNCED options for action [in preparing elements of a strategy and a targeted and costed programme of action as well as a set of principles concerning prevention, reduction and control of marine degradation caused by land-based activities] to be considered again at the Fourth Preparatory Committee.(42)

B.2 PREVENTION, REDUCTION AND CONTROL OF DEGRADATION OF THE MARINE ENVIRONMENT FROM SEA-BASED ACTIVITIES

Management-Related Activities

39. Wider ratification by coastal States of the relevant conventions, and the extension of the existing regimes to cover pollution caused by substances other than oil is essential. Specific objectives could be considered and developed in the following areas:

(a) International ratification and implementation of shipping conventions and more rigorous enforcement of the discharge provisions, eg. through port State control. Coastal nations, on the basis of guidelines issues by International Maritime Organization, and assisted by same, could aim to

establish by 1997 port facilities for the collection and disposal of waste oil, chemical residues and garbage, especially in sensitive sea areas where ships are not permitted to make discharges. This would require substantial funding.

(b) Encourage States to ratify [and finalize the future strategy of] the London Dumping Convention by 1994.

(c) Develop an international regulatory global framework for offshore oil discharges, safety and disposal activities by 1995.

(d) Implement liability and compensation regimes covering pollution damage from shipping and dumping activities, the immediate goal being the development of a regime for hazardous and noxious substances carried by ships.(47)

40. Countries should initiate regional agreements to prevent, reduce and control marine pollution arising from artificial islands, installations and structures used in the exploration and exploitation of offshore oil [and other] resources, and ballast water dumping rules to prevent the spread of non-indigenous organisms.(48)

41. As concerns shipping, coastal States could urge wider ratification and implementation of safety and marine pollution conventions, including those dealing with liability and compensation for pollution damage and rigorous enforcement of MARPOL regulations (e.g., through exercise of port State control procedures and aerial surveillance of shipping lanes). States could also implement more stringent pollution control measures [in semi-enclosed seas, the polar regions and particularly sensitive sea areas].(49)

42. In relation to ports, countries could urge the provision of facilities for collection and treatment of wastes from ships and for vessels and yachts in marinas and fishing harbours by:

(a) In accordance with the London Dumping Convention and MARPOL provisions, regulation of dredging of navigation channels and disposal of dredged material, including global criteria for ocean disposal of contaminated spoils.

(b) Development of guidelines for environmental impact assesaments of port development and expansion and wider enforcement of codes of practice relating to transportation of hazardous and dangerous cargoes, and for detection of illicit movement of toxic chemicals and hazardous wastes. (50)

[(c) Channels of communication and coordination between the Secretariats of the Basel and London Dumping Conventions should be strengthen and be more open in order to prevent parties to the Basel Convention from exporting, for disposal in the ocean, substances referred to in Annexes I and II to the London Dumping Convention to States not parties to that Convention.]

43.

(a) States should develop oil and chemical spill contingency plans at local, national and regional levels and establish at the national level, government/industry collaboration mechanism on provision of oil spill response materials and equipment stockpiles, and training of clean-up personnel, together with a funding mechanism.(51)

(b) States should establish a network of regional oil/chemical spil response centres with collaboration from IMO and regional Governments.

44. Member States should agree to stop the dumping and incineration of all hazardous wastes and substances and encourage a global commitment to more assiduous application of the provisions of the London Dumping Convention and regional dumping protocols, where adopted. IMO could prepare global guidelines concerning waste audits and clean production, and lists of substances and wastes prohibited from dumping at sea and could assist States to enter into regional agreements in this regard.(52)

45. States should develop liability and compensation regimes for hazardous and noxious substances as well as other sea-based activities (e.g., dumping, offshore oil and gas and transboundary movements of hazardous substances and wastes).(53)

Data and Information

[46. [States] Countries should establish monitoring systems and regularly report information on pollutants and efforts to control and prevent them to relevant regional and international organisations.]

47. [States] Countries should identify ongoing and planned programs of monitoring of the marine environment, with a view to integrating activities and establishing priorites for further monitoring activities.

48. [States] Countries should cooperate through relevant international organisations in integrated monitoring of the marine environment by:

(a) Expanding the international mussel watch program.
(b) Relating monitoring activities to action plans and pollution control and abatement strategies.
(c) Expanding GIS mapping and information systems.

[49. Countries could:

(a) Complete, with the support of regional and national programmes, inventories and hazard assessments of marine pollution sources by 1997, and
(b) Complete national, regional and global assessments of marine environment by 1997.(37(c) and (d))
(c) [States] Countries should, with the appropriate funding support build on existing facilities, support the Global Ocean Observing System. The GOOS should include appropriate equipment to monitor pollution in coastal and open ocean areas. Data on marine pollution should be available to interested parties and stored at World Data Centres.]

Capacity Building

50. States should create a high level mechanism, within the national planning and development bodies, for policy-making and long term planning on oceans and coastal areas. The main tasks could include the following:

(a) Rationalize and/or coordinate sectoral responsibilities for oceans and coastal areas within Governments and establish a reviewing mechanism to up-date and enforce relevant national legislation to ocean management and coastal development.
(b) Establish advisory bodies for broad consultation to stimulate participation with local administrations, the business community, the academic sector, user groups and the general public.
(c) Include institutional capacity building in agreements between development aid bodies and developing country institutions.(66)

51. Coastal States should organise training and extension programmes for resource users including fishermen, women, and incorporate ocean issues and management in educational curricula and public awareness campaigns. Indigenous peoples should be supported to maintain and apply their traditional knowledge of the coastal environment and marine resources.(67)

52. Relevant regional agencies should assist developing coastal countries in improving the scientific, technological, professional and related institutional capacities.

(a) Identify existing capabilities and existing facilities within the region and potentials for expansion in regional marine and coastal areas research, training, management and technologies.
(b) Establish and maintain regional centres capable of assisting countries in analyzing information and assessing the principal environmental problems, in reinforcing surveillance and implementing environmental impact assessment and monitoring programmes with predictive capabilities.
(c) Prepare national and regional contingency and emergency plans, standard techniques for monitoring species and habitats and develop geographic information systems for spatial planning in coastal areas.
(d) Create special programmes to assist island States to integrate environment and development in the planning process for their limited areas and resources.
(e) Establish programmes on marine environmental education and enhance public awareness of the role of the marine environment for society.(68)
[(f) The development aspects should also be focussed upon to restore symmetry and balance the complementary environment and development concerns.]

International and Regional Cooperation and Coordination

[52bis While an international land-based pollution agreement is needed, as stated, support for such an agreement is conditioned upon the establishment of effective provisions for financing and development, use and transfer of environmentally sound technologies.

High priority needs to be given to the development of effective financial mechanisms at the national, regional and global levels for sewage treatment facilities, in order to ensure that developing countries have access to the necessary resources to deal in a more effective way land-based marine pollution.]

53. Countries could work with appropriate international organizations to develop comparable monitoring techniques, methodologies, and measurements for all aspects of marine pollution.

Means of Implementation/Resource Requirements

54. Provide adequate financial and technical resources to assist developing countries to prevent and solve problems associated with activities that threaten the marine environment.

55. Provide technological cooperation, technology transfer, and financial resources to support the implementation of national action programmes and regional joint comprehensive programmes of action.

56. Specific suggestions include:

(a) A funding mechanism for building sewage treatment facilities, including grants or concessional loans from international agencies, such as UNDP, UNEP, [IOC], World Bank and other appropriate regional funds.

57. Establishing of specific financing [for developing countries of] mechanisms for building port facilities, including loans or grants from international agencies, including the UNDP, UNEP, [IOC] and World Bank's Global Environmental Facility or a system of "Reception Facility Funds" of automatic charges on [non-sovereign immune] ships.(50(a))

[C. MARINE LIVING RESOURCES [SUSTAINABLE UTILIZATION ON THE HIGH SEAS AND UNDER NATIONAL JURISDICTION]
[C. MANAGEMENT OF THE HIGH SEAS: LIVING MARINE RESOURCES
D. SUSTAINABLE USE OF LIVING MARINE RESOURCES UNDER NATIONAL JURISDICTION].

Basis for action

General

58. The conservation and management of marine living resources should take place on the basis of sustainable utilization. This is of social, economic and nutritional importance, and contributes to national food security, not least to developing countries and indigenous peoples. The special status of indigenous peoples should be recognized including their rights to utilization and protection of their habitats on a sustainable basis.

[C.1 HIGH SEAS]

59. While high seas fisheries contribute to the effective utilisation of resources and to the world supply of protein, management performance on the high seas, has not infrequently been unsuccessful and many resources are overfished. [Management performance on the high seas has not always been successful and several types of resources are overfished]. In a number of high seas areas, the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) are not being implemented as intended. [There are problems

of unregulated fishing, vessel reflagging to escape controls, fishing practices such as large-scale pelagic driftnetting and overfishing, lack of surveillance, control and enforcement and, in general, lack of the required cooperation with other States.]

[C.2 NATIONAL JURISDICTION]

60. World oceans yield about 80-90 million tons per year, 95% of which comes from EEZs. They provide healthy food and livelihoods to millions of people in coastal areas. However, many countries continue to face mounting problems related to implementation of their rights and obligations under UNCLOS, including local overfishing, [poor management performance] unauthorized incursions by foreign vessels, ecosystem degradation, increased stock fluctuations, overcapitalization, excessive fleet sizes, inefficient selective gear, unreliable data bases and inadequate information about their resource base, increasing competition between artisanal and industrial fishing and between fishing and other types of activities.(22)

61. Problems extend beyond fisheries. Coral reefs and other largely tropical coastal habitats such as seagrass communities, mangroves and estuaries among the most highly diverse, integrated and productive of the earth's ecosystems. They often serve important ecological functions, provide protection from hazards of the open sea, and are critical natural resources for food, energy, and economic development. In various parts of the world such coastal and marine systems are under stress or threatened due to factors ranging from local cultural practices to changes in sea temperature and or sea level.

[Objectives

General

[62. Fisheries [must] be managed through ecosystem, multi-species management approaches on the basis of sustainable ecologically sound practices consistent with the best available scientific information, and must be effectively monitored and enforced, in order to ensure conservation and promote optimum utilization of the living resources.

63. Ecosystem and multi-species approaches must be developed and implemented to preserve the biological diversity and productivity of marine species and maintain the ecological relationships among populations of such species.]

64. [States must] [States in accordance to their national legislation and policies could] ensure as far as practicable that human activities do not result in the decrease of any population of marine species with special attention to marine mammals and sea turtles, below a level at which its recruitment is stable , but preferably not below a level close to that which ensures the greatest net annual increment; populations of marine species that have been depleted by harvesting should be restored to these levels.

65. Data and information [must] [should] be obtained [by States with the cooperation of international organisations], including verifiable catch and effort statistics, on the commercial harvesting of populations of marine species, including by-catch, adequate to reliably assess and predict the effects of such harvesting.

66. Selective fishing gear and practices should be used to [avoid] [minimise] significant waste of catch of target populations of marine species and the significant bycatch of non-target species.

[66bis. The full implementation of General Assembly resolution 44/225 on large-scale pelagic drifnet fishing.]

[67. States should ensure that each population of marine species that is the target of fishing [exploitation] activities is harvested in areas and at the stage of its life cycle that ensures maximum economic efficiency, consistent with these principles.]

68. Fish [marine species] for human food, should take priority over other uses, and the amount available for human food should be increased by avoiding wasteage and improving techniques of capture [harvest], handling and transportation.]

[C.1 HIGH SEAS]

69. [On the high seas, States fishing a stock which straddles the 200 mile limit of a coastal State, [or highly migratory species which are found within that limit], [must] take all measures necessary to give effect to the special interest and responsibility of the coastal State concerning the portion of the stock outside the 200 mile limit [and in the highly migratory species while outside that limit]. High seas fishing [must] not have an adverse impact on the resources under the jurisdiction of coastal States].

70. Over the next few years, effective regional and international mechanisms and strategies should be developed and implemented where appropriate, through cooperation between high seas fishing States, coastal States and relevant international organizations and existing regional and international mechanisms should be reinforced where appropriate:

(a) To conserve and make full sustainable use of the living marine resources of the high seas, and to improve the status of those which are depleted.
(b) To define and identify management units based on large marine ecosystems concepts.
(c) To provide for the negotiation of appropriate international agreements.
d) To establish appropriate exploitation regimes for stocks whose life cycles encompass both the high seas and EEZ's.

[C.2 NATIONAL JURISDICTION]

71. The objective would be to build national capacity over the next 10 years to make full sustainable use of the EEZs.(23)

Activities

General

[72. [Assessment] [Promotion] of fishing methods to minimise adverse impacts of fishing on target and non-target species, other users and marine ecosystems;]

[72. Assessment of fishing methods and banning of unsustainable fishing techniques, such as large scale pelagic drifnet fishing in accordance with General Assembly resolution 44/225, in order to minimise adverse impacts of fishing on target and non-target species, other users and marine ecosystems.]

73. Development and sharing of analytical and predictive tools such as stock assessment and bioeconomic models to assist in risk management and decision-making;

74. [Cautious handing of] [Harmonizing with] all situations dealing with risk, uncertainty and irreversibility;

75. Integration of environmental factors in management;

76. Acquisition of all the data, current and historic, necessary for effective management of fisheries resources including data on catch and effort, by-catch and the impact of the fishing on other users and the marine environment;

77. Promotion of regional fisheries management bodies [to cover the gaps in the existing coverage of the world's oceans;]

81. [Marine mammals. Continuing consultations.]

[- Affirm the validity of the 1972 United Nations Conference on the Human Environment recommendation that there should be a 10 year moratorium on Commercial Whaling and call for its full implementation by extending the present moratorium on commercial whaling until 1995/96;

- Welcome the IWC report on small cetaceans and urge IWC to continue to strengthen this work, and Governments specifically concerned to act promptly on the recommendations of the IWC's Scientific Committee on this issue;

- Call for an international conference with the widest possible participation to be convened by 1995 to review the international machinery for the protection of all cetaceans, and to consider the most effective means for providing cetacean research, conservation and management into the twenty-first century.]

[Support the International Whaling Commission in its efforts to ensure proper and effective conservation and development of large whale stocks.

Same efforts for conservation of other depleted or endangered marine mammals should be made by countries and appropriate international bodies.]

([- Acknowledge the principles of sustainable use in all dealings with marine mammals resources, and recognize the special needs of developing countries and indigenous peoples of the marine resources of their nutritional and economic development.

- Support the IWC in its efforts to restore stocks of highly migratory species of whales and call for increased scientific research and advice to fulfil this effort.

- Support scientific research on small cetaceans with the aim of creating national and regional conservation of these species.

- Support the Bonn Convention in its efforts to promote the establishment of regional agreements on management and conservation of small cetaceans.

- Call on the Governments to review and strengthen all possible efforts to counteract pollution threats to all marine mammals.]

82. [Polar regions and specific seas]
[Delete]
[The Antarctic Treaty Parties that singling out Antarctica to be identified as a specific regional issue for consideration by UNCED is inappropriate for the following reasons:

-The Antarctica Treaty provides a tried and tested basis for managing activities in Antarctica.

-In the carefully drafted General Assembly resolution 44/228, neither Antarctica nor any other specific region has been identified as one of the UNCED priority areas.

-UNCED already has a hardly manageable workload; identifying specific regions for priority action within the proposed Agenda 21 would open the doors to unravel a carefully negotiated settlement on priority issues and areas as contained in resolution 44/228.

Consistent with this approach therefore, the Treaty Parties will oppose the inclusion in a possible Agenda 21 of specific references to Antarctica such as those contained inter alia in paragraphs 18, 20 and 34 of A/CONF.151/PC/42/Add.6, or as proposed by some distinguished delegates in the course of our debate.]

- [In the Polar regions, through United Nations involvement, to improve and introduce the anticipatory approach and adopt and implement an Antarctic Conservation Strategy, the Arctic Environment Protection Strategy and promote the Arctic Monitoring and Assessment Programme.

The following elements should be included:
-To establish a sanctuary for all cetaceans in its traditional natural habitat.

-Call upon the ATCP to protect and improve the status of living resources in the Antarctic region, including marine ecosystems and report regularly to the United Nations on its status through the General Assembly.

In relation to Maintenance of Ecosystem and Marine Biodiversity, the following elements should be included:

- (a) Call for efforts to prevent overfishing including the banning of prospecting and mining in Antarctica so as to ensure the protection of its environment is for the benefit of all mankind.

(b) Call for the establishment of a nature reserve or World Park in Antarctica which constitute an integral part of the global commons.

In relation to Strengthening International Institutions and Legal Instruments, the following elements should be included:

- To establish a United Nations sponsored station in Antarctica with the view to promoting coordinated international cooperation in scientific research for the benefit of mankind, particularly the importance of Antarctica to the global environment and ecosystems, as well as an early warning system on climate change and accidents.

- Call for the widest possible participation of the international community to review and negotiate a comprehensive convention on the Conservation and Protection of Antarctica.]

Capacity Building

83. Each coastal country could establish:

(a) A unified policy framework and intergovernmental mechanisms for coastal management and marine resources management through a permanent consultation between the decision makers and the users.
(b) Procedures to involve the coastal communities the academic and private sector in the development and implementing programmes.(64)

84. Member States could create an interministerial mechanism, within the national planning and development bodies, for policy-making and long term planning on oceans and coastal areas. The main tasks could include the following:

(a) Rationalize and/or coordinate sectoral responsabilities for oceans and coastal areas within governments and establish a reviewing mechanism to update and enforce relevant national legislation to ocean management and coastal development.
(b) Establish advisory bodies for broad consultation to stimulate participation with local administrations, the business community, the academic sector, user groups and the general public.
(c) Include institutional capacity building in agreements between development aid bodies and developing country institutions.(66)

85. Relevant regional agencies could assist coastal countries in improving the scientific, technological, professional and related institutional capacities.

(a) Identify existing capabilities and existing facilities within the countries of the region; determine the needs of human resources, the scientific and technical infrastructure required and potential for expansion in regional marine and coastal areas research, training, management and technologies.
(b) Establish and maintain regional centres capable of assisting countries in analysing information and assessing the principal environmental problems, in reinforcing surveillance and implementing environmental impact assessment and monitoring programmes with predictive capabilities.
(c) Prepare national and regional contingency and emergency plans, standard techniques for monitoring species and habitats and develop geographic information systems for spatial planning in coastal areas. To establish the appropriate legislation to protect the marine and coastal ecosystems.
(d) Create special programmes to assist island States to integrate environment and development in the planning process for their limited areas and resources.
(e) Establish programmes on marine environmental education and enhance public awareness of the role of the marine environment for society.(68)

[C.1 HIGH SEAS][HIGH SEAS AND NATIONAL JURISDICTION]

Management Related

86. States [must] effectively monitor and control fishing activities of their nationals vessels and crews thereof to ensure the conservation of the resources, compliance with applicable conservation and management rules, complete and accurate reporting of catches and effort, and [avoidance][minimisation] of incidental catch.

87. States [must] ensure that vessels authorized to fly their flag comply with the [applicable] conservation and management rules adopted by competent international [or regional] organizations or, where no such organization exists, through other [international] arrangements.

88. States [must] establish penalties under domestic law, and take legal action against their nationals, vessels and crews thereof, for any violation of [applicable] rules adopted by competent international [or regional] organizations or, where no such organizations exist, through other [international] arrangements, whether such violations are committed directly or through resort to techniques such as the reflagging of vessels in foreign countries. States must take similar action for any violation of domestically instituted conservation and management rules.

89. States whose nationals or vessels fish in the same area of the high seas [must] cooperate to establish international [or regional] arrangements or organizations to ensure sustainable and optimally developed fisheries through effective conservation and management regimes, including as appropriate [reciprocal inspection and] enforcement systems and dispute settlement mechanisms.

90. [States [must] cooperate with competent international organizations or, where such organizations do not exist, through other international arrangements, and ensure that their nationals, vessels and crews thereof, do not violate rules adopted pursuant to such regimes].

91. In areas of the high seas where a management régime has been agreed within the framework of a [competent international [or regional] organization] or, where such an organization does not exist, through another [international] arrangement, States [must] ensure that high seas fishing is undertaken only in accordance with the conservation and management rules adopted under that organization or arrangement.

92. [With respect to a stock occurring both within the exclusive economic zone of a coastal State and in an area of the high seas adjacent to it, the management regime applied to the stock [must] provide for consistency of the measures applied on the high seas with those applied by the coastal State within its exclusive economic zone; [high seas fisheries [must] not be directed toward the stock when the stock is fully utilized by the coastal state within its exclusive economic zone].

93. [With respect to a highly migratory species, the management régime on the high seas [must] fully recognize the sovereign rights of the coastal State in its exclusive economic zone and, taking into account the special interest of the coastal State in the species while outside its zone, avoid adverse impact on the resource within that zone].

Data and Information

94. The transparency of high seas fishing activities [must] be ensured. States [must] make available to appropriate international [or regional] organizations all relevant data relating to catches on the high seas. The relevant international [or regional] organizations should establish appropriate monitoring programmes including the standardized collection of scientific data and the deployment of scientific observers.

Capacity Building

(see under General)

Global and Regional Cooperation and Coordination

95. The international community should strengthen capacities for collaboration between regional and global [international] fishery bodies [dealing with conservation and management of the oceans and seas. The], the United Nations Environment Programme Regional Seas Programme should be strengthened and the following action should be taken:

(a) Relevant United Nations or other international Agencies should develop guidelines for better implementation of the Law of the Sea Convention (UNCLOS). FAO should prepare technical guidelines on responsible fishing in the high seas.

(b) Countries together with relevant international fisheries organizations and United Nations Agencies should establish programmes and special agreements to protect endangered species and stocks and to establish appropriate exploitation régimes for all stocks and species including those whose life cycles encompass both the high seas and EEZs. [This should include banning unsustainable fishing techniques and practices and restriction of less sustainable techniques and practices.][Delete.](20)

96. Relevant United Nations bodies and other international agencies could develop collaborative technical and research programmes to improve understanding of species life cycles and migration, identifying critical areas and life stages.

(a) Countries with the assistance of relevant United Nations and other international Agencies and non-governmental organizations, could identify linkages between EEZs and high seas resources and could develop further the concept of large marine ecosystems and its potential for practical application in ocean management régimes.

[(b) FAO and other international agencies should assess resources potential, optimal fishing régimes and acceptable levels of exploitation and develop reliable international monitoring, control, surveillance and enforcement systems.]

(c) Regional fisheries bodies should link information systems which have part of the high seas ecosystem under their responsibility and inventory all stocks (target and non-target) in order to set up rehabilitation measures where appropriate.

(d) GATT assisted by the FAO, should strengthen international technical cooperation mechanisms in relation to high seas stock-commodities with a view to identifying and eventually eliminating inappropriate trade barriers and assisting in preventing the evasion of international management régimes.(21)

[96bis. States should develop multilateral standards dealing with the interlinkages between trade and the protection of living marine resources, taking into account concerns on sustainable development.]

[C.2 NATIONAL JURISDICTION]

Management Related

97. Coastal States could establish systems to regulate access through licensing, explicit user's rights, limited entry, space allocation, closure zones and economic instruments; and domestic and international collaborative mechanisms on issues related to migratory fish [and long range fleet monitoring and control.]

98. Coastal States could strengthen environmentally sound artisanal fishing technologies, collaborate with traditional coastal communities for the elimination of unsound ones, and strengthen training and extension services in coordination with rural agriculture services together with appropriate financing mechanisms.

99. Coastal States could ensure that, in their negotiation and implementation of international agreements on the conservation of living marine resources, indigenous peoples are represented and their interests in particular their right to subsistence, are secured.(24(b) and 28(b)

Data and Information

100. Coastal states together with United Nations and other international agencies could complete/update living resource and critical habitat inventories of EEZ's, at national and regional levels (coastal wetland, mangroves, seagrass beds, etc.) and develop legislation to protect them. FAO could develop methodologies to improve assessments in data-limited situations for the analysis of interactions between sectors and management under uncertainty.(25(a))

101. Coastal States could establish and improve data collection systems, and, when appropriate, provide the necessary data to regional and global fisheries bodies.

Capacity Building

102. National policy, legal and regulatory frameworks could be completed with the assistance of relevant international organizations looking toward improved enforcement capacity, investment and financing including joint venture agreements, regulation of access, enhancement of small-scale fisheries, the improvement of seafood quality and rationalisation of trade.(24)

103. Information systems, training and management-oriented research programmes could be implemented to provide a framework incorporating the ecosystem management approach at the national and regional level.(25)

104. Mariculture and coastal aquaculture potentials could be developed. National analyses for potential mariculture, coastal aquaculture (areas, species and methodologies) and other improvements e.g. artificial reefs, in each developing coastal country could be developed within ten years within a framework of Integrated National Planning.

105. Coastal States could take steps to enhance the productivity and utilization of their marine living resources in terms of food production and income production from food products, pharmaceutical products, and recreational, cultural and aesthetic uses.

106. Coastal states could develop systems for the recognition, recording and application of community based traditional knowledge concerning marine resources and ecosystems and incorporate them into modern management systems in collaboration with the people and community concerned.(29(d)

Global and Regional Cooperation and Coordination

107. Relevant United Nations and other international agencies should assist coastal countries to complete their legal and policy frameworks in line with UNCLOS, as well as to improve management methods including control and surveillance and provide assistance to developing countries for research and development of economic uses of marine living resources. They should prepare guidelines for [responsible] [environmentally sound]fishing with a view to reduce wastes, protect endangered species, reduce pollution [from fishing] and improve fishing gear efficiency and selectivity.(24(a)) [They should also provide for the transfer of environmentally sound technology to developing countries to develop their fisheries, and to replace fishing practices identified as harmful to marine species.][As related to fishing practices which become harmful to marine species because of significant ways of catch or significant bycatch of non-target species, in relation to the development of new technologies, new standards should be reached through international agreements. These agreements will provide for the transfer of the new environmentally sound technology to developing countries and the provision of new additional funds for its implementation.]

108. Relevant United Nations and other international agencies should prepare a set of guidelines for potential application of a precautionary approach to living resources management; the concept of the Marine Catchment Basin for enclosed seas, as well as the ecosystem management approach and "large marine ecosystems" concepts, including the practical implications and applications.(25(c))

109. FAO should prepare guidelines for [responsible and] environmentally sound intensive aquaculture to reduce environmental impacts and develop plans for basic, strategic and applied research especially on rural aquaculture.(26(b)

[109bis. States should develop multilateral standards dealing with the interlinkages between trade and the protection of living marine resources, taking into account concerns on sustainable development.]

110. The international community should develop/improve markets to promote direct human consumption of fish and to enhance the contribution of subsistence fisheries.(27(c)

111. Relevant United Nations Agencies should establish a methodology to assess the nutritional and healthimpacts of fishery policies and projects.(27(d))

112. Relevant United Nations programmes and agencies could provide to traditional coastal communities of indigenous peoples and, in developing countries, to subsistence fishermen [fisherfolk] the technical and financial assistance to organize and maintain global networks for the exchange and improvements of traditional and scientific knowledge of marine resources, their protection and environmentally sound use; and for the study and development of traditional management systems.

Means of Implementation/Resource Requirements

113. Relevant United Nations Agencies, donor community and development agencies could adopt a funding coordinating mechanism to assist all coastal States to build national and regional capacities for ocean and coastal areas management.

[C.1 HIGH SEAS]

Human Resources

(To be completed)

Scientific and Technical Infrastructure

(To be completed)

Financing and Costing

(To be completed)

[C.2 NATIONAL JURISDICTION]

Human Resources

114. The regional bodies could develop multidisciplinary training and research on marine living resources, particularly in social and economic sciences as well as in the use of geographical information systems.(25(b))

115. A framework to support artisanal fisheries and small-scale use of living marine resources and, in developing countries, subsistence fishermen could be developed at national and regional levels and encourage equitable participation of women and indigenous peoples.(29)

116. Countries could integrate small-scale fisheries development in coastal zone planning, and create and encourage representation of fishermen and communities in planning management bodies.(29(a))

117. Countries could encourage for community-based users, including traditional coastal communities, women's groups and minorities/indigenous people, increased rights and responsibilities for management and enforcement [on fishing and non-fishing concerns including eco-tourism]; allocate marine resources equitably among small-scale, large-scale and sport fisheries [providing priority for the subsistence of minorities/indigenous peoples] ; and set a system for small-scale fishworker rights.(29(b))

(B) Scientific and Technical Infrastructure

118. Countries could implement the FAO/ICES Code of Practice for Consideration of Transfer and Introduction of Marine and Freshwater Organisms and regional bodies could transfer available safe technologies and establish cooperative programmes with national centres.(26(c))

119. Improving seafood quality [and fisheries based industrialisation including deep-sea fishing for developing countries, in particular it] will be crucial for promoting trade and meeting social goals linked to nutrition and health.(27)

120. Countries could agree on global quality assurance systems in order to improve consumer confidence and maximize economic returns.(27(a))

121. Countries with the assistance of FAO could develop programmes to improve handling and processing, reducing post-harvest losses and discards.(27(b))

122. Coastal States could strengthen environmentally sound artisanal and subsistence fishing activities, collaborate with traditional coastal communities for the elimination of unsound ones and strengthen training and extension services in coordination with rural agriculture services together with appropriate financing mechanisms.(29(c))

Financing and Costing

123. Development agencies and donors should provide technical and financial support through regional organisations.(28(a))

124. Countries could utilize development funding for habitat management [and for action oriented research projects to immediately address prevailing problems].(24(c))

125. FAO should assist countries to develop a program for transfer of management methods and environmentally sound fishing technology, particularly for small scale fishing and for the protection of resources with low resilience (marine mammals, sharks), [and trade in tropical fishing for the aquarium business as well as trade in corals.](24(d))

D. ADDRESSING CRITICAL UNCERTAINTIES [FOR OCEAN MANAGEMENT] AND CLIMATE CHANGE

Basis for action

126. The cornerstone for protecting the oceans and coastal areas and for providing rational use and development of their living and non-living resources is the ability to determine the present state of systems and predict future conditions. Effective management of oceans and coastal areas is often stalled by the high degree of uncertainties in present information. This limits the ability to make predictions and assess environmental change. In order to rationally manage the marine and coastal environment and its resources in accordance with international law, we need to develop the ability to predict natural and man-induced changes in marine and coastal ecosystems. Accordingly, it is necessary to restructure the mechanisms for generating and disseminating information based on the results of research and monitoring activities. Research, systematic observation and monitoring information generated must be correctly communicated to all levels of the management structure and the public.(69)

127. There are many uncertainties about climate change and [particularly] sea level rise. Small charges in sea level rise have the potential of causing significant changes to small island States. Response strategies should be based on sound information [data] . A long-term co- operative research commitment [based on differentiated responsibilities of countries] is needed to reduce this great uncertainty. Meanwhile, precautionary measures should be initiated to diminish the risks and effects, particularly on small islands, low-lying States and coastal zones of the world.(70)

Objectives

128. States acting individually and through appropriate regional and international fora agree:

(a) To conduct scientific research on, systematic observation and monitoring of the marine environment, within and beyond the limits of national jurisdiction.
[(b) To provide full and open sharing of data and information resulting from scientific research and monitoring.]
(c) To develop standard intercalibrated procedures, measuring techniques, and data storage capabilities for scientific research on and systematic observation and monitoring of the marine environment.
(d) To provide improved forecasts of marine conditions for safety and efficiency of maritime operations, and inhabitants of coastal areas.

Activities

Management-related activities

129. Sections 1, 2, 3, and 5 of this paper address management priorities for specific resources. In conjunction with those, coastal States should adopt special measures to cope with potential climate change and sea level rise. Of utmost priority is the need to develop globally accepted methodologies for coastal vulnerability assessment, modelling and response strategies particularly for priority areas, such as small island, low-lying States and critical coastal areas.

130. Coastal countries with the cooperation of relevant United Nations Agencies could establish research priorities to address critical uncertainties for ocean and coastal area management. They could identify on-going and planned programs of systematic observation of the marine environment, with a view to integrating activities and establishing priorities. Research priorities include:

(a) Living resources potential, optimal fishing regimes and acceptable levels of exploitation including the species life cycle and migration to identify critical areas and life stages.
(b) Fate and effect of all forms of chemical pollution, toxic phytoplankton blooms in coastal ecosystems.
(c) Human health related to consumption of fishery products from marine and coastal ecosystems.

(d) Development of appropriate and new marine technologies to utilise under-exploited resources, for aquaculture, food processing and for pollution control including marine environmental accountancy as a management tool.
(e) Response of critical or sensitive marine ecosystems and rehabilitation strategies of degraded areas relevant for coastal sustainable development.(76)

Data and Information

131. Improved systems to collect, synthesize, and disseminate data and information on coastal and marine systems are essential to reduce uncertainties and improve predictability. The Global Ocean Observation System (GOOS) of the IOC is being designed to provide some of the required information. An effective system must contain more elements than GOOS. States and relevant international organizations should provide analyses into appropriate international data networks. Specifically, States should:

132.
(a) Support development of the multi-parametric cross-disciplinary global ocean systematic observation of nearshore and coastal areas to build an understanding of climate change, e.g. GOOS (Document A/CONF.151/PC/70.)(74(c))
(b) Create regional accessible and readily-transferred multi-sectorial information bases, covering the results of research and systematic observation programmes, linked to existing data and information services and mechanisms for communicating these results to decision makers (including environmental managers) and the public in general.(72)
(c) Endorse the storage and archiving of, as well as [access] [exchange of] to, data and information collected in marine scientific research and systematic observation programs through the World Data Centers.

Capacity Building

133. Recognizing the need to acquire new information on oceans to address all marine-related management topics, including climate change, nations agree to:

(a) Establish funding mechanisms for an inter-disciplinary systematic observation system through coordination among United Nations Agencies and development agencies including a programme on marine technology and engineering and to help ensure implementation of on-going and planned global and regional ocean climate-related research programmes.(73)
(b) Offer technical cooperation, with the participation of relevant international organizations, in developing the capacity of coastal States to carry out and participate in research and monitoring, as well as to assimilate its results.

(iv) International and Regional Cooperation and Coordination.

134. Relevant United Nations Agencies should develop and integrate [monitoring] and systematic observations networks and establish high-level inter-agency coordination and monitoring and systematic observation mechanisms. This would include a comprehensive review of existing national, regional and global data bases. These activities would involve as appropriate:

(a) Mechanisms to develop comparable and compatible techniques, validation of methodologies and measurements, regular scientific review, agreed formats for presentation, including Geographic Information Systems and storage, and communication of the information gathered to potential users.

(b) Systematic observation and monitoring of coastal habitats, inventories of marine pollution sources and fisheries statistics.

[(c) Assurance that the GOOS contains capability to systematic observation monitor coastal as well as deep ocean features such as sea level changes and pollution.]

(d) Better representation of agencies dealing with the marine environment (IOC, IMO) in United Nations-wide coordination efforts.

(e) Better coordination of international and coastal and marine programmes

(i) Consider the development of improved relationships among the relevant international organizations (UNEP, UNESCO, IOC, WMO, IMO, FAO, IAEA, UNLOS secretariat, IAEA), including strengthening ICSPRO, the Inter- Secretariat Committee on Scientific Programs Related to Oceanography.

135. Develop and integrate regional [monitoring] [systematic observation] programmes into the UNEP Regional Seas Programmes which would contribute to the implementation of global ocean and coastal observing systems. The long-term systems should be based on the principle of [full and open] exchange of data. Monitoring should be capable of predicting the effects of climate related emergencies on existing physical, socio-economic coastal infrastructure (e.g. human settlements, industries, tourism, communication, ports and aquaculture). Site-specific analysis of sea level rise effects and temperature elevations on sensitive coastal ecosystems and lagoons and economically important species will also be necessary.(75)

Means of Implementation/Resource Requirements

TO BE FURTHER DEVELOPED.

(i) Human Resource Development
(ii) Scientific and Technological Infrastructure Development
(iii) Costing and Financing

E. STRENGTHENING INTERNATIONAL, INCLUDING REGIONAL, COOPERATION AND COORDINATION

Basis for action

136. In order to effectuate the strategies and activities as elaborated upon in the other Programme Areas with respect to oceans [and coastal areas] and to ensure the integration of environment and development aspects, existing institutional arrangements at national, regional and global level need adjustment and strengthening. There are numerous global and regional institutions with competence in marine issues. A comprehensive convention and a number of other legal instruments deal with the various aspects of ocean [and coastal] affairs. With increasing attention to issues relating to the oceans [and coastal areas], it is important that Governments be able to consider interrelated problems as a whole, and thus identify important issues,

priorities and strategic planning needs, promote intra-and interregional cooperation, and mobilize funding building upon existing mechanisms within the United Nations system, there is a need to ensure the existence of regular and effective intergovernmental discussion and mechanisms for coordination among the relevant agencies and bodies concerned with ocean [and coastal]-related activities, particularly in environment and development aspects.

137. Similarly attention is required to intergovernmental and intersecretariat cooperation and coordination are needed at the regional level, where a number of bodies already exist both within and outside the United Nations system.

138. The United Nations Convention on the Law of the Sea contains a comprehensive global framework and lays down basic rights and duties relating to environment and development activities with respect oceans. Acceptance of these rights and duties and other relevant international agreements forms an important basis for international coordination and cooperation. Within this framework, wider acceptance of related conventions could also enhance international cooperation and ensure their coherent and harmonized development.(55)

139. Settlement of disputes, [such as on trade and environment, should be dealt with in appropriate bi-lateral, regional and international fora, e.g. GATT. In accordance with established international rules and dispute settlement agreements Exhaustive and full use of expertise available in major international organization shall be made.][should be dealt with in appropriate bilateral, regional and international forum in accordance with multilalteral standards to be agreed upon, givin due consideration to concerns on sustainable development. Exhaustive and full use of expertise available in relevan international organisations should be made. Pending enactment of such standards, States should refrain from taking unilaterally non tariff measures to protect a given marine resource.]

140. Governments participating in various international fora often represent the interests of different national sectors. In ocean-related fields, where all issues are closely interrelated it is essential that each Government integrate sectoral interest.(56)

Objectives

141.

(a) Ensure, at the regional and global level, consistency among and integration of the various sectoral activities in addressing environment and development matters with respect to oceans [and coastal areas], including those covered in the other programme areas on oceans in Agenda 21.

(b) Ensure that, within the United Nations system, there is opportunity for regular intergovernmental review and consideration of environment and development matters with respect to oceans [and coastal areas] as a whole, and the agreed principles, strategy and standards.

(c) Ensure that there is effective information exchange and, where appropriate, institutional linkage between regional institutions dealing with environment and development matters with respect to oceans [and coastal areas].

(d) Ensure the effective operation of coordinating mechanisms for the components of the United Nations system dealing with environment and development matters with respect to oceans, and other concerned organizations including links with donor and assistance agencies.

Activities

Management

142.
(a) Global

(i) [The United Nations General Assembly should] ensure regular consideration [within the United Nations System] at intergovernmental level of general ocean **[and coastal]** issues [environment and development matters with respect to oceans] and request the Secretary- General and Executive Heads of United Nations agencies and organizations to strengthen consultative and coordinative mechanisms for this purpose.

(ii) Introduce special arrangements to ensure the participation of all relevant international organizations, including the development and donor agencies;

(iii) Seek scientific advice and consider the use of advisory expert groups [expert groups], as needed;

(iv) Establish reporting arrangements as between the General Assembly and the governing bodies of the United Nations system;

(v) Strengthen consultative and coordinative arrangements within the United Nations system and particularly IOC, UNEP and UNDP, including their regional components, in support of the General Assembly forum and other intergovernmental meetings with broad mandates in ocean [and coastal] affairs.

Regional

143.
(i) Strengthen existing intergovernmental regional cooperation, particularly the Regional Seas Programmes of UNEP, and establish or designate regional, intergovernmental fora where needed, for consultations on questions of harmonizing policies and integrating cooperative activities taking account of environmental circumstances, regional priorities and levels of development;

(ii) Introduce arrangements for the participation of all relevant organizations and bodies, development assistance and donor agencies, as well as of the private sector;

(iii) Ensure collaboration and coordination among all relevant institutions active in a region, including adequate staff representation;

(iv) Arrange within intergovernmental regional cooperation for periodic interregional consultations in support of those conducted at the global level.

Data and Information Capacity Building

144.

(i) Provision of special assistance to States, on request, to improve their capacity to implementing the principles laid down the Law of the Sea Convention and other relevant instruments, including the implementation of the marine scientific research regime as a management tool;

(ii) Development of a central reference point for information on and access to legislation as well as for advice on legislative and related institutional measures for the implementation of legal agreements.

(iii) Preparation of overview reports, to include also identification and examination of general issues, and preparation of summary reports on all United Nations system planning in the oceans [and coastal] sector, incorporating also related activities outside the United Nations system.

(iv) Through system-wide consultations, preparation of agendas and supporting documentation on the following matters;

(a) General policies and planning and identification of priority areas for coordinated effort, with particular emphasis on promotion of integrated marine and coastal area management and national capability-building requirements;

(b) Review and assessment of impediments to implementation and enforcement of global and regional agreements, including their institutional aspects, and of all developments affecting the progressive development of relevant international law, with particular attention to the development of liability regimes and dispute settlement mechanisms;

(c) Review of assistance to developing countries and modes of facilitating collaboration with development assistance and donor agencies, non-governmental organizations and the private sector.

RESOURCES REQUIREMENTS/MEANS OF IMPLEMENTS

Human Resources Development
Scientific and Technological Infrastructure Development
Costing and Financing

(TO BE DEVELOPED)

[G. HUMAN RESOURCE DEVELOPMENT FOR OCEAN [AND COASTAL] MANAGEMENT.
To be developed]

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